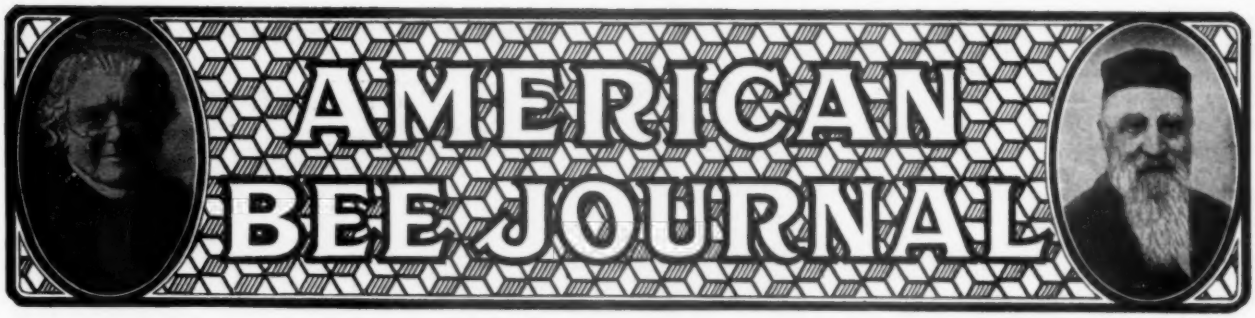


Vol. LXXIII—No. 5 Hamilton, Illinois, May, 1933 Monthly, $1.00 a Year

Can We Afford to Clarify Honey?--A Question of Policy

By Gordon P. Dillon
Michigan

SEVERAL articles have appeared recently in the journals discussing developments in methods of improving the appearance and properties of honey.* I have before me a copy of the talk given by Dr. Henry G. Knight, Chief of the Bureau of Chemistry and Soils, November 9, 1932 over the NBC during Honey Week in which he gives a resume of the investigations of Lothrop and Paine on the effect of colloids on the properties of honey.

One or two questions have been bobbing around in my mind since reading these articles. But before considering them, let me quote a portion of Dr. Knight's talk:

". . . The first problem of the scientists was to find out why extracted honey was sometimes cloudy instead of clear, why it granulated, and why it turned dark and decomposed at cooking temperatures. They seem to have found the answer to this problem. They have discovered that most of the troubles with extracted honey are caused by small amounts of very finely divided material, colloidal in character, suspended in it. These colloids are present in the honey when it is in the honeycomb. . . . So, evidently the problem of the chemists is to find a means of removing these colloids from extracted honey."

The articles to which I have referred discuss a method of removing these colloids from honey by the use of "bentonite." W. T. Brand of Mitchell, Nebraska, has succeeded in clarifying honey by the use of electricity, according to the editor of the Beekeeper's Item.** I am not familiar with the nature of the process at all.

With the further development of these processes and with the possibility of their commercial application, we will some day be confronted with a grave question of policy, and we will do well to give it earnest thought before the day for decision comes!

We must admit that honey is guilty on all the points mentioned by Dr. Knight. It is sometimes cloudy, it does granulate, and it is not entirely suitable for cooking at high temperatures because it decomposes. The question that is bothering me is aren't we liable to make a bad bargain in getting rid of these admittedly undesirable characteristics of honey?

When I first read these articles, I felt very strongly that in the regard of the consumer we would sacrifice the idea of the purity of our product as surely by taking something out as was done in the days before the Food and Drugs Act, by putting something in.

We have been laboring (even if somewhat ineffectually) for a long time to build up a public consciousness of the healthfulness of honey. We have been saying, "Use honey because it is one of the most healthful sweets you can buy. It is an unrefined product. It contains minerals which science is showing to be indispensable for health."

It seems that any process of treating honey which involves removal of some of its normal constituents, is an admission that we have been using the wrong tactics. Have we been wrong in saying that one of the great advantages of honey is that it is a natural food, unrefined? Does it really need to have some of the impurities taken out so that it will look nice, like white sugar and white bread? To follow this line of thought in practice will be liable to involve the industry in a certain amount of undesirable controversy. Just as surely as there is put on the market honey that has been clarified by the removal of some of its constituents, those who are selling honey that has not been so treated will start selling their product on the basis that it is pure honey, with all of its natural constituents present, hence more healthful. The public has already too many doubts about honey. I imagine that there is no product for sale today about which there are more misconceptions than honey. Can we afford to add to the doubts by opening up a new controversy over the purity of our product?

We have been considering this problem from a more or less philosophical point of view. What will the dollars and cents view be? There are industries that have profited by removing parts of their product. The milk distributors regularly take out part of the cream from the milk they receive from the farmer and resell it as whole milk. Some brands of coffee are being offered for sale in which much of the caffeine has been removed. Cigarettes are advertised as having been treated to remove irritants. Apparently the backers of the idea of taking something out of a product are making money at it.

The examples of coffee and cigar-

*1. The Colloidal Constituents of Honey and Their Influence on Color and Clarity.—R. E. Lothrop and H. S. Paine, American Bee Journal, Volume 71, No. 6, June, 1931, page 280-1.
2. The Colloidal Constituents of Honey and Their Effect on Foaming and Scum Formation.—R. E. Lothrop and H. S. Paine, American Bee Journal, Volume 72, No. 11, November 1932, pages 444, 450.
3. Influence of Colloidal Constituents on the Development of Color in Honey.—R. E. Lothrop and H. S. Paine, American Bee Journal, Volume 73, No. 1, January 1933, pages 23, 27.

** Editorial in Beekeeper's Item on W. T. Brand's (Mitchell, Nebraska) method of clarifying honey electrically.—Beekeeper's Item, January 1933, page 18.

Author's note: I wish it clear that I have no criticism of the work of the Department of Agriculture or of anyone investigating honey. We need to know more about it. If there is any criticism to be made, it must be directed toward the beekeepers for being too dependent upon the government for the solution of their problems. We need more interest in helping our own business. In other words, more boosting for the American Honey Institute.

ettes tend to prove, however, that it wouldn't be such a good idea for the producers of honey to adopt the plan. They advertise that they are taking out something which is admittedly bad for the health. Who hasn't read of the evils of caffeine and of the nameless irritants which make one cough in carload lots? On the basis of our present knowledge, honey sellers will not be able to advertise that the parts of honey removed are either harmful or irritating. Moreover, it is not definitely known that the proposed methods of clarification do not remove the minerals. And we have worked hard to teach people that the minerals are important in making honey the "Health Sweet." Research on this point is badly needed.

But, supposing that we decide to waive the question of healthfulness and to depend upon the improved appearance of the treated honey, its freedom from granulation, and its better cooking qualities to make it indispensable in the kitchen and dining room. That would put honey upon the same level as its competitors, sugar and syrups. Honey cannot compete on that level, for with the present methods of production we can't hope to meet sugar prices permanently. Furthermore, not only does sugar have the advantage in price, but it isn't sticky, and it doesn't require an expensive container made necessary by the water which one must buy with honey.

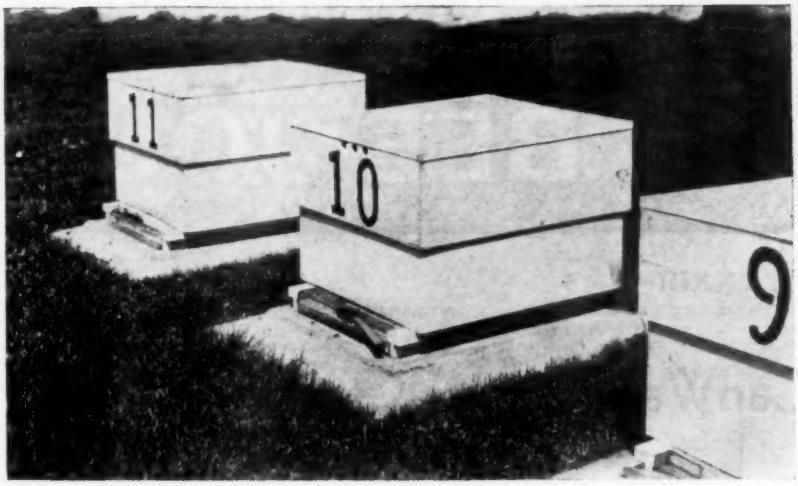
In view of this we see that to sacrifice our position that honey is a supremely healthful food would be disastrous, especially now that many people are being converted to the idea that health foods are worth while, even if sometimes more expensive or inconvenient to handle. What is needed is a determined program, not of improving the product, but of **telling** the people that what we are selling is good. Caffeine-free coffee is being sold not simply because the caffeine is gone, but because the people are told that it is gone, frequently, loudly, and with variations.

Beekeeping in Roumania

We are in receipt of a sample copy of "Roumania Apicola," a very interesting magazine on bees and several small pamphlets on bees and beekeeping, also one on honey as a food and a medicament. It is pleasant to see the progress made in beekeeping.

We also received a copy of an Argentina magazine, published in Boenos Aires, "Gaceta de Granja" or the Gazette of the Farm, for the cultivation of poultry, rabbits and bees. It is a very pretty magazine.

A Good Hive Stand



THE picture taken in the apiary of Lee Horning at Morrison, Illinois, shows hive stands made with sloping sides which permits running the lawn mower over the lower edge. In this way all the grass is cut and there is no uncut edging to bother with. While the hive is several inches above the surface of the surrounding lawn, the edge is below the grass with a gradual slope toward the center for about eight inches.

The entire apiary is on stands of this kind with the grass all mowed. It is one of the most attractive in the state of Illinois.

Wyoming Office Moved

Please be advised that the Office of the State Entomologist of Wyoming has been transferred to Powell, Wyoming. This means, therefore, that the address of the Wyoming Beekeepers' Association will also be Powell until further notice.

C. L. Corkins,
State Entomologist.

Reduction in Sugar

In the "Food Field Reporter" is forecast a reduction of about 2,000,000 tons in sugar. That is a lot of sweetness, isn't it? It also reports that as a result the trade is optimistic. Sugar consumption, however, in the United States, according to statistics, has declined 235,000 tons during the past year. Louisiana sugar producers are negotiating for a loan to enable them to store 36 per cent of their crop, and there is an announced reduction in the sugar output of Cuba, Java, and Japan.

In 1832 the original per capita consumption of sugar in the United States was 9.96 pounds, which went to the high point of 108.1 pounds in 1931, dropping to 101.7 pounds in 1932.

Just what effect the movements in sugar have on honey is difficult to tell, but that honey in some degree follows sugar is the conclusion of most of us. A rise in the price of sugar would perhaps bring some benefit to the price of honey. Actually, honey in wholesale lots this year has sold in some places for less than sugar.

Properties of Cyanogas

By E. S. Miller
Indiana

Considering the fact that the use of "cyanogas" for killing diseased bees and the beemoth is rather recent, beekeepers should be informed regarding the properties of this compound. Cyanogas, chemically known as calcium cyanide, is, in its commercial form, a gray powder. It combines with the moisture of the air according to the following equation:

$$Ca(CN)_2 + 2H_2O = 2HCN + Ca(OH)_2$$

In other words, calcium cyanide combines with water vapor to form hydrogen cyanide and slaked lime. This gas (HCN) has the odor of peach kernels and if inhaled in any considerable quantity might easily prove fatal. It is the water solution of the gas that is known as prussic acid. Even one breath of the undiluted gas, as when generated by combining sodium or potassium cyanide with sulfuric acid, would be exceedingly dangerous. However, calcium cyanide combines more slowly with the moisture of the air, rendering it safer for general use. It should not be used in a closed building. In killing the beemoths, infested hives and supers should be stacked outside over

a bottom board and tightly covered. A teaspoonful of the powder can then be placed under the combs and the gas will rise and quickly kill all winged moths and larvæ. It does not seem to affect the eggs, which hatch in a short time, thus rendering a repetition of the treatment necessary.

Cyanogas is probably the quickest and most effective means of killing diseased bees. A small teaspoonful on a card or piece of paper shoved in at the hive entrance will kill almost instantly every bee, none having an opportunity to escape with its load of infected honey to be carried to another hive, as might be the case when one tries to kill bees by means of sulfur.

It is claimed by those who profess to know that the gas does not affect the honey, which later may be used for human consumption.

A Bee Play

The extension service of Iowa State College has prepared a little play, "Drama of the Beehive" for use in the program service of the Farm Bureau meetings. It is written by W. H. Stacey assisted by Fannie R. Buchanan and F. B. Paddock.

It is presented as a series of pantomines acted by school children while a reader tells the story.

New German Bee Magazine

The beekeepers of German Switzerland are to have another bee magazine. The March issue of "Der Imkerfreund" was Volume 1, No. 1. The editor of the magazine is our old friend Dr. K. Brunnish who is well known to our readers through his articles which have appeared from time to time in the American Bee Journal.

German Switzerland is a relatively small territory, but their beekeepers are well organized. They have several thousand members in their association. The present publication intends to supplement the work of the already well established "Schweizerische Bienenzeitung."

Fresh Fruit Lemonade

(Two glasses)

3 tablespoonfuls lemon juice
6 tablespoonfuls orange juice
1 tablespoonful pineapple juice
3 tablespoonfuls honey
Pinch of salt
1 tablespoonful of strawberries crushed as prepared for shortcake

Mix lemon juice and honey; add remaining fruit juices and crushed strawberries, pinch of salt, two cups spring water and pour in iced tea glasses filled with cracked ice.

THE HUMAN PUZZLE

Who Is He?

Such an increase in the number of guesses last month, we'll try it again with another "Who is he?" No hints this time either. He is so well known that very few will be needed. He is not only a good sized beekeeper but well known in other ways and has a host of friends. It ought not to be hard this time.

As before, to the first three to send in the right guess, we will send a book on beekeeping. Don't hesitate to try again, whether or not you have failed or succeeded in the other two numbers.

Distance is no barrier, because of wrong guesses, and, as you will see by the report of the guesses for April, the chances are just as good whether you live close to Hamilton and receive your Journal early, or far away and receive it later.

The April "Who Is He?"

Herman Rauchfuss, Dean of Rocky Mountain beekeepers and breeder of the Rauchfuss strain of Caucasians.

Guesses were received from Iowa, Kansas, Massachusetts, California, Illinois, South Dakota, New Jersey, Wisconsin, Wyoming, New York, North Dakota, Minnesota, Ohio and Colorado. This is two more states than for March.

There were a number of incorrect guesses—J. M. Cutts, D. D. Stover, E. R. Root, Allan Latham, W. E. Stepp, Jay Smith were named.

The following were the winners: Ivan Whiting, Roscoe, Illinois, No. 1 (He was No. 1 in April too. If this keeps on, we may have to offer a grand prize at the end of the year.) C. J. Ramboz, Golden, Colorado, No. 2; and Dr. R. L. Parker, Manhattan, Kansas, No. 3.

Now, come on, let's hear you tell who this smiling fellow is. Who is this "Human Puzzle?"

Colorado Honey Producers' Association Benefits from Tie-up with Boy Scout Merit Badge Show

By Lucius S. Flint

If you can gain the good will of a boy, you have taken a long stride toward getting the business of his parents. Such was the premise on which the Colorado Honey Producers Association of Denver based its decision to cooperate with the Boy Scouts in putting on a Merit Badge Show.

The Colorado group sponsored a Scout troop in demonstrating the requirements for a merit badge on beekeeping. The group bought a booth at the three-night-show for the small sum of $10, and furnished equipment for the boys to use in making demonstrations. The boys explained to the crowd the things that a Scout must know to qualify for a badge, and called attention to the pieces of equipment used. The company name was posted in the back of the booth.

In addition to gaining the good will and support of the entire Boy Scout organization, the display brought merchandise and equipment to the attention of literally thousands of parents of boys who visited the show. The plan was first used three years ago, when the first merit badge show was held, and it proved so effective that it has been repeated for the last two years. It was found that the boys and their parents appreciated the aid given to make possible the show, and made every effort to reciprocate.

The late Frank Rauchfuss, former manager of the Colorado Honey Producers Association, also made a successful bid for good will among Boy Scouts by donating his expert service on beekeeping merit badge examinations. Herman Rauchfuss, the present manager, will continue this work.

(Bartlett.)

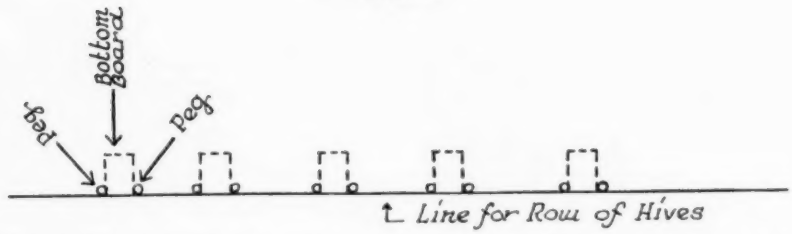
Another Annual

The Beekeeping Annual for 1933 is out. This publication issued each year by Herbert Mace of Harlow, Sussex, England, contains about a hundred pages with paper cover and sells for one shilling.

The annual is a review of things of interest in the beekeeping industry for the current year. In addition names of bee publications, officers of associations and numerous other items are included.

To Lay Out a Bee Yard

By Walter H. Hull
Virginia



IT is sound advice not to spend too much time laying out a bee yard. You can easily spend more time on it than the job is worth. On the other hand, a well laid out yard has a definite value. Its very neatness is a perpetual inspiration toward good management, while orderly arrangement of the hives promotes efficiency in the work, enabling the operator to move without delay from one hive to the next. I have seen yards so haphazard in arrangement that a man never knew for sure when he had finished working them. He almost had to understand calculus and the fourth dimension in order to know how many hives there were even after he had counted them.

It pays to be orderly, especially when a yard can be laid out in a neat, orderly manner with very little more work than it takes to set the hives down higgledy-piggledy. Here's how it's done:

Stretch a line across one side of the yard, where you want the first row of hives to stand. Beginning at the end of this line, or at any convenient point on it, locate the position for your first hive. To do this, lay a bottom board down, making the front edge flush with your line. Driving a peg at each front corner of the bottom board, the front edge of the peg flush with the line. Move the bottom board along to where you want the next hive to set and repeat. When you reach the end of the row move your line along whatever distance you want between rows, and go on as before.

That is all. The two pegs at the front of each bottom board, when you set the hives in place, will make them not only in line, but square with the line, and those are the two vital points in neatness of arrangement.

Rows should be parallel but distance between rows need not be uniform. The distance between hives in the row should preferably not be uniform. They may even be placed at random in the rows and still give a neat appearance.

A certain amount of levelling is desirable for purely practical reasons —straight combs, dry bottom boards, etc. I like my hives levelled very accurately from side to side, and the front of each hive just three-eighths inch lower than the back. But I can never think to take a spirit level along for the job, nor find time to use one even if I had it. So my hives are levelled by the free-hand method, with results noticeably short of perfection.

But by following the plan outlined above one can easily lay out a yard for sixty colonies in an hour—or in half that time, if he is in a hurry—and will generally find it well worth while.

A Modification of Stepp's Transfer

By J. H. Sturdevant
Nebraska

In April, Mr. Stepp gives a method of transferring bees from an old gum or other brood nest by placing the new hive body above after having prepared a board with a hole to cover the hive to be transferred and on which to place the new body without the bottom.

This is a most excellent way of making transfer and I have used a similar one for several years. Mr. Stepp evidently prefers to smoke the bees up and out promptly, but I prefer to give the bees more time and sometimes to make a division in this way and perhaps leave a colony in the old hive until another season. In fact, I have one old double walled hive from which I have transferred a colony every year for many years, leaving enough bees in to rebuild a colony and to be ready for the following year.

I hear somebody whispering "What about disease in that old frameless body?" Well, I just upset the old body, tear out enough comb to satisfy the curiosity of the most skeptical person alive about disease. Now for my plan of using the Stepp Plan. I first prepare my old gum or box hive by making a careful inspection for disease from the bottom. If the brood is healthy, I arrange the cover board and place an empty hive body on it with one or two frames of brood from another colony in this body, put the cover on it and leave until the next morning when I go to the hive and lift out the two frames of brood. Ordinarily I find the old queen between these. If not the first morning, I repeat until she is found.

Having found the queen, I next place an excluder below the top brood nest and leave the queen in the above part for several days. The bees will gradually work up and carry honey up and a new brood nest is established.

At certain seasons, a queen will be reared in the old brood nest under the excluder in the old hive. To avoid trouble this way, sometime, within five or six days after having introduced the old queen above the excluder, I go quietly to the hive and carefully lift the old queen out, leaving fresh eggs and brood in this top body. If I desire to keep the queen for other use or to return the top body later, I carry her with a frame of brood and a few bees and locate her where she will be taken care of.

If there are no cells in the lower body, then the bees will need to form cells in the top on the combs recently used by the old queen but if there are queen cells below the excluder, a queen will emerge there and mate and after her return, she will go above (the excluder will have been removed) and you can then proceed as you did the first time with the assurance that the young queen will form her brood nest in the top body and that the bees will, within a short time, carry everything above, deserting the old brood nest below.

This lower body should be removed before storage of honey begins because the bees may prefer to store in the old combs rather than to build new ones above.

Following this plan then, the Stepp Plan is modified quite a bit and while the transfer requires several trips, it is very convenient. I also use it to remove honey from undesirable combs or to work the brood out of undesirable combs that one wants to remove and melt up, whether on cross-combs, in old box hives or old gums.

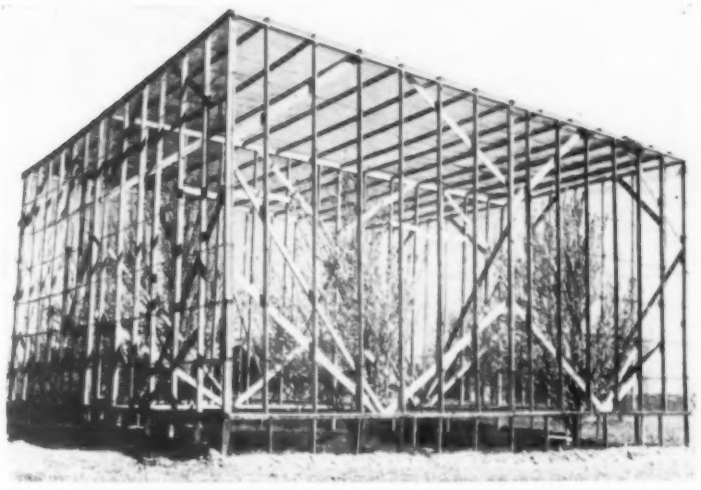
Care should be used in making a thorough inspection of the old gum or box from the bottom up for American foulbrood. All cracks should be closed to prevent robbing. I find, however, that the entrance should be left at the bottom only, as otherwise, the bees may adopt a sort of a top entrance plan and begin storing below the brood nest.

Honey Week of Increasing Value

In 1931 a total of 28 states co-operated in Honey Week. In 1932 a total of 42 states co-operated in Honey Week. That tells its own story.

The Control of Fire Blight By Use of Sprays

By Dr. H. R. Rosen
Agricultural Experiment Station
University of Arkansas



Four large pear trees completely enclosed within 16 mesh wire-netting, screened-off into two separate compartments. Into one of these was placed a contaminated hive and into the other a hive free from fire blight bacteria, in order to study the relationship of bees to blossom blight.

IN the previous articles published in the June and July numbers, 1931, of the American Bee Journal, the writer has attempted to present the present knowledge of the fire blight disease of pears and apples, with special reference to the possible role of insects in acting as disseminating agents of the blight bacteria.

It was recorded that the writer succeeded in isolating this germ from beehives located in a blight-infected apple orchard, and that he was able to produce typical blight infections on healthy pear twigs with such isolations. As these artificial infections were produced from material, including bees, taken from hives throughout the winter and early spring prior to the appearance of new blight, it appeared that this may explain how the disease is initiated in the blossoms. This evidence, however, was not considered conclusive.

Granting that the germ can live within beehives through the winter and that some of the bees will be contaminated with it in the spring, how can it be proved that such bees are responsible for the initiation of blossom blight? Theoretically, there are at least three possible ways of proving or disproving this idea, and all are being tried.

The first method consists of utilizing bearing pear or apple trees that were free from blight in the past season, secluding them from blossom-visiting insects by the use of insect-proof screens, or by screening them and including a contaminated hive in one case and an uncontaminated beehive in another. If it were found that the screened-in trees associated with the contaminated hive contracted blossom blight when the screened-in trees associated with an uncontaminated hive were free from disease, then the evidence might be considered positive. Both of these types have been tried during the past two years (see illustration) but unfortunately all the blossoms were killed by the freeze of March 27 in 1931, and by the freezes of March 5 to 9 in 1932. Only two blossom clusters were found blighted, an entirely insignificant amount, on the trees which were associated with the contaminated hive. The others remained free from disease.

The second method, which may be considered more or less empirical, consists of removing all hives from an orchard which is well isolated and out of the reach of neighbors' bees or wild bees, and comparing it with other orchards which possess beehives.

The third method consists of applying a spray which possesses germicidal properties but which would not interfere with the activities of the honeybee. It is this method which has given the writer certain outstanding results during the past season.

For a number of years it has been known that Bordeaux mixture will kill fire blight bacteria, in fact one can find references, some of them dating from the early nineties, in which growers have reported successful control of fire blight by the application of Bordeaux sprays. Unfortunately, however, for every report of success by this method, there are one or more who report failure.

Now if the writer's findings concerning the overwintering of the fire blight germ within beehives are correct, and if bees coming from such hives are responsible for the disease starting in blossoms, then it should be possible to control blight by applying a Bordeaux spray when bees are likely to visit blossoms, that is, when the blossoms are unfurled. Such sprays do not interfere with the activity of honeybees, as the writer has frequently observed, and containing no arsenic they probably have no deleterious effect on these insects.

The plan of the spray experiment was as follows. A block of 167 Jonathan apple trees, 21 years old, which had suffered a loss from fire blight of 95 per cent of its blossom clusters in 1930 and 60 per cent in 1931, was placed at our disposal by the owner. Four rows, comprising 64 trees, served as controls, receiving the regular early season spray applications common in many of the apple sections of America, consisting of a cluster bud or pink spray, a calyx spray and a first cover spray, the material being one and one half gallons of commercial lime sulphur to 50 gallons of water, to which was added one and one-half pounds of arsenate of lead in the calyx spray and in the first cover spray. Seven rows, comprising 103 trees, growing alongside of the check trees, received the experimental spray applications for the control of blossom blight. The material consisted of a weak Bordeaux mixture, made up of one pound of powdered copper sulphate, three pounds of hydrated lime, and 50 gallons of water. To this was added arsenate of lead in the calyx and cover sprays in the same amount used for the checks. The applications were made as follows: First, as a cluster bud or pink spray (April 8 and 9); second, when approximately 25 per cent of the blossoms were fully open (April 12); third, when approximately 80 per cent of the blossoms were open (April 16); fourth, when about seven eights of the petals had fallen (April 20); and fifth (May 9) when the first brood of codling moths was anticipated.

It is to be noted that, aside from chemicals, the main point of difference between the experimental spray program and that of the standard

(Turn to page 169)

Good Work

Work such as that recently done by Prof. P. H. Tracy of the Dairy Division of the University of Illinois, deserves special commendation. In these days of keen competition in the market for sweets, honey needs new outlets. Prof. Tracy has given much time to the development of a product combining honey with cream. Numerous difficulties presented themselves but the information is now available which makes it possible to market a satisfactory confection made from honey and cream. Fortunately similar work seeking new uses or combinations for honey is under way in several institutions. Beekeepers should lend every encouragment to such workers.

Package Bees

The value of package bees to the northern beekeeper depends greatly upon the time of his honeyflow. In localities where the flow starts early in June it is difficult to establish packages and have them ready for the flow. Where the flow comes in July or August from sweet clover or alfalfa it is quite possible to do as well, or better, with packages as with wintered over colonies. In fact some beemen are seriously considering whether it will not be better to kill the queens at the height of the honeyflow to avoid raising brood which will not be ready in time to gather the harvest. When the flow is ended the bees are shaken out, the honey extracted and the equipment piled up until needed for package bees the following spring. When the cost of wintering is considered, it is probably cheaper to buy packages than to carry over full colonies. The cost of maintenance from October until April and the labor of winter preparation will more than pay the present cost of a package with queen to be delivered in spring.

Comb Foundation

It is surprising how many beekeepers there are who do not seem to understand the proper use of comb foundation. A narrow strip is often used along the top of a frame when a full sheet should be used. A half sheet is even worse than a narrow strip. The reason is that the bees build worker comb as far down as the foundation extends and then usually begin building drone cells. A hive containing a large portion of drone combs can never be expected to yield a profitable crop of honey. The drones are consumers only and since they bring no honey to the hive, eat a portion of that brought in by the worker bees.

When hiving a new swarm, if there is a young and vigorous queen the bees will build worker combs even though given narrow strips of foundation. The young queen is eager to lay and is waiting to use the new cells as fast as they are built. As soon as her needs are met, however, they usually start building drone comb. An old and failing queen is soon supplied and combs built by a swarm with such a queen will be largely composed of drone cells.

The beekeeper by the proper use of foundation insures not only straight combs, but combs composed of worker cells. Such combs are the best investment that the beekeeper can make. The quality of combs within his hives largely determines the prosperity of the honey producer. To remove poor combs and get new ones built on full sheets of foundation increases the returns to a far greater extent than is usually recognized.

Full sheets in the section boxes are likewise profitable. The greater the area of surface of foundation, the more room there is for the bees to work at one time.

Honey in the Diet

The Iowa Beekeepers' Bulletin, published by the extension department of Iowa State College at Ames, contains an article, "Use of Honey in Diet for Children." This article is by Alma H. Jones, extension specialist in child development. She includes several recipes.

The craving for sweets on the part of children is recognized as normal and proper provision should be made for its satisfaction. Since cane sugar lacks numerous elements which are present in honey, there is a growing interest in the latter product on the part of child specialists.

Since persons engaged in public service must depend upon the public for support of their work, it is quite natural that they should give special attention to products in which interest is shown. If the public manifests an interest in honey, such workers will investigate its possibilities and make the facts known. The reason why honey has not received greater attention is simply the lack of interest on the part of those served by public agencies.

A hundred letters to any public institution asking for information regarding any product is likely to result in someone being assigned the task of getting the desired facts. Beekeepers should manifest appreciation of such work as this.

The extension department of Nebraska College of Agriculture recently sent out circulars from radio talks giving information concerning honey in the winter diet and baking with honey. Nebraska beemen should take notice.

Spring Locations

Many of the best honey producing locations have but scant resources for spring brood rearing. In such localities plants which furnish early pollen are extremely valuable. In large areas of the Plains Region there is but little for the bees in April and May. Of special importance are some early blooming plants of the parsley family. In portions of Montana the hilly pasture land is yellow with the Biscuit root or whisk-broom parsley in May. Related species are found in the Platte Valley and other sections of Nebraska and Wyoming.

Localities with the largest variety of spring sources are often poorly supplied with sources yielding surplus. It is accordingly important for the beekeeper to become familiar with the honey plants of the entire region in which he is located.

Specialization

Some beekeepers are inclined to believe that in future it is only those who can produce honey at prices in competition with sugar who can remain permanently in the business. While it is true that much honey has recently been sold at prices similar to sugar, we are convinced that the peculiar qualities of honey will command a price much above the usual range of sugar.

There are some large scale beekeepers who are in position to produce honey at low prices and stay in the business, but the number is comparatively small. The greater part of American honey comes from localities where the ten year average is only about fifty pounds per colony or even less. In such a location one could hardly produce honey in competition with sugar. The fellow with a fifty pound average is badly handicapped in selling at prices which would make a profit for the man who gets a hundred or more pounds per colony.

Registration of Bees

The American Bee Journal has always opposed the registration of bees. The necessity for a license is usually recognized as applicable to those lines of business which require public supervision. We contend that there is no more honorable business than that of honey production. To submit to a license is to admit that there is something about our work which requires oversight for the protection of the public.

In most cases registration has first been advocated by the beemen as a source of additional funds for inspection work. Here again when put into practice the result has ended in disappointment. Where registration has been adopted, sooner or later public support has been withdrawn, leaving the only funds available those secured from the collection of the license fee. The beekeeper pays taxes and makes the same contribution to public welfare as his neighbors. He is accordingly entitled to the same consideration in the distribution of public funds.

The tax burden is becoming intolerable. The tendency is to add new taxes every year. If a man must pay a fee to keep bees, why not also to keep a cow, or hens, or pigs or pigeons. If he is to pay a separate tax for each, the sum total will absorb no small part of his income.

Keeping the Record Straight

Ruches et Ruchers de Roumanie on the occasion of the International Congress of Apiculture published a series of maps and charts showing the distribution of the different types of hives in Roumania. The chart gives the approximate number of seventeen different hives in common use. Of these it is shown that more than two and one-half times as many of the Dadant and Dadant-Blatt hives are used than the nearest competitor. About four times as many are in use as the Layens, the third in popularity. The Langstroth and four other of the less popular types do not equal ten per cent of the number of Dadant hives.

Of the seventeen hives in common use the chart shows that much more than one third of the entire number are of the Dadant type. There are several other countries where the large hives of this type are the ones in most common use.

This hardly supports some statements which have recently appeared to the effect that the big hive is unimportant in Europe.

Special Qualities in Honey

Of late there has developed a considerable demand for honey which contains melezitose. Such honey comes commonly from the Douglas Fir and from Pine trees. It is reported as coming from the scrub pines in Pennsylvania, Maryland and Virginia on rather frequent occasions and from the Douglas fir in Washington and British Columbia.

Pine or fir sugar or honeydew appears as an exudation from the tree and is not an insect secretion as is the case with much honeydew.

An interesting question arises as to whether there may be honey available in numerous localities which contains special properties which would result in a favorable market demand if the peculiar merits were understood. This supports the contention often made in these columns that the greatest need of the beekeeping industry is research to determine what honey contains and what special purposes it may be made to serve. A beekeeper located where some special honey was produced might find himself in a very favorable situation through supply of such a special demand.

The Institute Honor Roll

The publication of the list of supporters of the American Honey Institute shows a large increase in the number of individuals who contribute. Because of lack of space it is impossible to publish the entire list in this issue. We hope to complete the list next month. Since every beekeeper who has honey to sell secures direct benefit from the work of the organization it is quite the proper thing that all should assist in meeting the expenses.

The Miller Family

The passing of Mrs. C. C. Miller on March 20 followed by the death of her sister, Miss Emma Wilson, on April 1, closes an important chapter in beekeeping history. Dr. C. C. Miller was among the best known of American beekeepers. Miss Wilson was his active assistant in the work of the apiary for many years. Both wrote for this Journal over a long period of time. Since the two women remained together in the old home after the passing of Doctor Miller, it seems fortunate that they were not divided in death. Life would have been lonely indeed for one of the sisters after the other had gone.

The Miller Memorial Library at the Wisconsin University will preserve the memory of this interesting group.

American Simplicity

We do not appreciate the simplicity of the American bee supplies until we examine an old world bee supply catalogue. One recently coming to this office from Germany lists a hundred or more different hives beside several straw skeps. The American beekeeper who has only to choose between two sizes of Langstroth hives and the two large hives in common use, Jumbo and Modified Dadant, has little to complain of. The fact is that standardization in this country has succeeded to a remarkable extent. With only four different kinds of hives commonly offered by the dealers in America, it is hardly to be expected that further agreement in elimination could be reached.

There is almost as much variety offered abroad in such equipment as smokers, extractors and hive tools of various kinds. The German catalogue mentioned offers more than 800 different items.

While we may have lost something of the poetry of beekeeping in this country, the development of beekeeping along commercial lines has gone far to simplify equipment and make for efficiency in the handling of the bees.

Races of Bees

With reference to the discussion of the merits of the various races of bees just now, it is of interest to note some comments of Langstroth nearly fifty years ago. Langstroth contended, that although inclined to rob when opportunity offered, the Italian bee was more courageous in defending its own hive than the black bees. Prof. Paddock has been inclined to blame the Italians for the widespread distribution of disease, because of their robbing tendency. No one, so far as the writer recalls, has recently had anything to say on the point mentioned by Langstroth. It would be interesting to hear from beekeepers who have observed the behavior of the dark bees in defending their own stores.

Reversible Frames

We have had some interesting correspondence with beekeepers who are interested in reversing the combs as a means of swarm control. This particular idea had wide discussion many years ago. In 1885 James Heddon, of Michigan, reported having had several thousand reversible brood combs in use and at the same time he tried reversible comb honey supers or as he called them, "comb honey cases." Heddon was a master in the art of publicity and anything which interested him was likely to get quite a following. For a time reversible frames became something of a fad and the Heddon hive, and later the Danzenbaker hive, made use of the idea. In practice results were disappointing.

For a time much space was devoted to the subject not only in American bee publications, but in European bee magazines also.

News Notes of American Honey Institute

IT is surprising the number of institutional and publication dieticians who are becoming interested in honey through the work of American Honey Institute. Miss Rowe, field representative of the "Farmers' Wife," St. Paul was a guest at a luncheon given by American Honey Institute during Wisconsin Farmer's Week. She told Miss Mable K. Ray of the interesting food services made with honey and Miss Rowe herself, wrote the introduction. Prof. Tracy of Illinois, provided a formula for honey cream mixture and the Institute sent it to Miss Ray. This article will give many homemakers on farms a chance to use honey in their homes. Seven new recipes for using honey were worked out in the Institute Kitchen. Mrs. Hurley, Wisconsin Agriculturalist and Farmer, in one of her early issues plans to feature honey.

The April issue of Ice Cream Review and the February issue of Milk Plant Monthly carried information on the use of honey in ice cream and on Prof. Tracy's new honey cream.

In March "Woman's Home Companion" Nell B. Nichols, outstanding home economist, uses honey in a sandwich filling and in the Delineator for April, Ann Batchelder, on page 26, features potatoes, baked beans and waffles and advises honey for the waffles. In Practical Home Economics, on page 110, Elizabeth Renaissance writing on "The Further Development of Cookery" pictures a kitchen with a beehive oven in the background.

The Glass Packer for April gives "Honey Facts for the Honey Packer" and a reprint from "Baker's Helper" features brown bread and baked beans and gives a formula for the brown bread loaf, calling for three pounds of honey. This reprint went to thousands of bakers. The Baker's Helper also has a book on "Cakes for Bakers" by Mr. Richards selling for $5.00 per copy. It is a large book full of technical information and any baker will find it worth much more than it costs. Chapter 13 of this book contains 18 pages which are devoted to the use of honey in the bakeshop. The address is Baker's Helper, 330 South Wells Street, Chicago, Illinois.

Baker's Review, New York City, plans to run a feature article on honey in October, just before Honey Week, and, the April issue of the Woman's Home Companion pictures a beehive and below the words "Honey Products are healthful and delicious," and gives combinations using honey.

What About the Annual Meeting?

San Antonio, Texas, is bidding for the next annual meeting of the American Honey Institute and American Honey Producers' League; so are Detroit, St. Paul, Minneapolis and Des Moines. What do beekeepers think about these places? Where would you go? We would be glad of opinions.

State Activities

Nebraska—Two radio talks, "Honey in the Winter Diet" and "Baking with Honey." Ruetta Day Blinks has a talk over KFAB on honey with recipes.

Iowa—Prof. Paddock sent us copies of the April Bulletin including an article on "Use of Honey in the Diet for Children," including recipes, written by Alma H. Jones, child development specialist at Iowa State College. In their monthly program service for Rural Township Community Meetings, the May program contains "The Drama of the Bee Hive." Write to R. K. Bliss, Director, Ames, Iowa, Iowa State College of Agriculture, if you are interested.

Wisconsin—Prof. Wilson obtained support from Washington County Bee Association for $16.30.

Death of Wheeler D. Wright

Wheeler D. Wright of Altamont, N. Y., died at his home, March 22, in his 82nd year. Mr. Wright was born at Berne, Albany County, N. Y., October 3, 1851.

He purchased his first stock of bees in 1866 and had been a beekeeper from that date until the time of his death. He built his first honey extractor in 1870 of wood, coated inside with wax. In the 70's he reared Italian queens for sale and issued a small catalog of beekeepers supplies, but soon decided there was more money for him in honey production, which he made his sole business for several years.

Later, on account of poor seasons, he concluded it was desirable to combine some other business with beekeeping and for twelve years he conducted a local fire insurance business.

Having a general knowledge of carpentry and cabinet work, Mr. Wright took up the study of architecture which he practiced for a number of years. Numerous buildings in Altamont and the surrounding country testify to his ability.

Mr. Wright was connected with the New York State Department of Agriculture for over twenty-five years in the capacity of Inspector of Apiaries.

His wife and one daughter survive him.

In Memory of Thomas Chantry

Thomas Chantry, seventy-two, Wellington, Utah, honey producer, well known to many of our readers, died March 14th. Mr. Chantry went to Utah twenty-five years ago, making his home at Ferron. He had lived in Wellington over twenty years. He was born in Casey, Iowa, February 3, 1861, graduating from Penn College, Oskaloosa. He taught school eighteen years before going to Utah, and has been affiliated with the honey industry over fifty years.

Mr. Chantry was a member of the Utah state agricultural board at one time and was Justice of the Peace and Democratic Chairman for Wellington at the time of his death.

Mr. Chantry was one of our most able beekeepers, a large operator and numerous articles have appeared about him and his methods. He was also a generous hearted citizen and is held in high esteem by his community and his state. He was particularly helpful to children and to those in need and there are many who speak of his good deeds.

"Archiv Fur Bienenkunde" Chances Publisher

The "Archiv fur Bienenkunde" is the only purely scientific periodical dealing with apicultural subjects. Although published in the German language, it has readers in nations in every part of the world. It contains mainly material which because of its volume and scientific nature cannot be printed in any of the other bee journals. It has become a necessity for every apicultural investigator to familiarize himself with the scientific apicultural progress such as published in the "Archiv." It should not be missing from the shelves of any agricultural, entomological or apicultural library.

Until last year the periodical was published by Karl Wachholtz, Neumuenster in Holstein (Germany) from whom the back volumes including 1932 can be secured. In 1933 the magazine will be published by its editor, Professor Doctor Ludwig Armbruster, Berlin-Dahlem, Lentze-Allee 86, Germany. The present subscription price is greatly reduced, (RM 6.00 instead of RM 10.00), but the volume and the character of the magazine remain unchanged. Six deliveries are made per year. The publisher would greatly appreciate securing all addresses of former subscribers and friends of his magazine as well as addresses of people who would be interested in a subscription.

[RM 6.00 or six German Marks with added postage corresponds to approximately $2.00 in U. S. A. currency.] —E. C. Alfonsus.

The Control of Fire Blight By Use of Sprays

(Continued from page 165)

spray schedule is the application of two sprays when the blossoms were fully open. The danger of injury from spraying such delicate organs was present of course in the mind of the owner and of the investigator, but the latter's previous experience in other orchards of applying one spray of Boredaux mixture to open apple blossoms, for three successive years previous to this experiment, suggested that two such sprays would not result in injury to blossoms or in excessive russeting of fruit. The necessity of two spray applications to open blossoms is obvious. Very rarely will any large proportion of the blossoms open at the same time on any pome; often as much as two weeks or more intervenes in Arkansas between the opening of the first blossoms and the later ones. Special attention is directed to the fact that arsenic was not used in the open-blossom sprays.

The observations and results of this particular experiment to control blight may be briefly recorded as follows: Blight was found in greater or less abundance on May 5 on almost every check tree, while the Bordeaux sprayed trees remained without any signs of blight. However, the amount of blighted blossom clusters on these checks was as a whole not nearly as great as in the past few years. Only one check tree showed as much as 308 blighted clusters, or 60 per cent. On May 18, when many of the fruits had attained the size of one inch in diameter, secondary blight was noticeable, though not in great quantities, on about one third of the check trees, and on two of the Bordeaux sprayed trees standing in the row next to the checks. Four blighted leaf shoots comprised the total number of secondary infections on the Bordeaux sprayed trees, a number which represented a very small fraction of the total number, uncounted, on the checks.

The results of this experiment are so clear cut that there can be no doubt about blossom blight having been almost completely controlled in the experimental spray plot. Viewed from a background of recurrent and disastrous epidemics of blight on pears and apples experienced in America for over a century, the results here cited are almost too good to be true. It appears doubtful to the writer that such nearly perfect control will always be obtained by this schedule. The results of this test, however, appear unmistakable. It is entirely possible that in those sections of the country where rain is the disseminating agent for primary blight, as it appears to be in Wisconsin, and where leafy shoots as well as closed blossoms are the first to show signs of blight, that this schedule will not be as effective as in the Ozarks. It is also possible that in other sections, with extremely dissimilar types of environmental factors, the results will be different. This however, remains to be determined.

Mrs. C. C. Miller and Miss Wilson Die

MISS EMMA WILSON

We are informed of the death of the widow of our old friend Dr. C. C. Miller. Mrs. Miller, Sidney Jane Wilson, was known through her husband, old Dr. C. C. Miller who wrote for so many years in the American Bee Journal and who departed this life on June 10, 1920, at the age of 89 years.

Mrs. Miller died March 20, 1933, at the age of 87 years, 7 months and 12 days.

Miss Margaret Emma Wilson, her sister, who worked with Dr. Miller at beekeeping for many years, also died April 1, 1933, only 11 days after Mrs. Miller. She was born May 2, 1852, and was therefore a little less than 81 years old. Miss Emma Wilson's name was well known to beekeepers all through America.

Since Dr. Miller's death, the two sisters had practically ceased beekeeping.

Where Does Beekeeping Stand in the Farm Scale?

Recent figures released by the Department of Agriculture, Washington, D. C., give the relative position of different farm products for the 1910-1914 period compared to the same price of farm products February 1, 1933.

Unfortunately, the Department did not keep record of honey prices from 1910 to 1914. However, this office did have a register of jobbing prices on honey at that time and we have made a few figures which may not come amiss to show that really the honey producer is in a fairly satisfactory situation compared to a number of the other agricultural lines.

In making these figures, we have our own former estimates of the 1910-1914 average which figures extra white extracted honey at 7-3/5 cents per pound f. o. b. Illinois points and have taken for the February 1, 1933 price 4¼ cents f. o. b. central Illinois points. Our readers can see, therefore, that we have not overpriced honey for the present period.

On this basis, the following percentages apply February 1933 prices compared to the average 1910-1914 —Corn 33%, wheat 35%, oats 35%, potatoes 44%, apples 62%, hogs 40%, cattle 56%, horses 40%, eggs 70%, honey 57%.

A striking thing is that the industries which have suffered the least are what you might call the "sideline industries" of agriculture, namely fruit growing, vegetable growing, poultry raising and dairying and beekeeping. One exception is "cattle" which are 56% of the 1910-1914 average.

These figures while not particularly fascinating for the beekeeper, do give us at least a ray of comfort in that we are better situated than the average large scale farmer.

The statement used to be made that a beekeeper with 300 colonies of bees could make more clear profit and get more satisfaction than could a farmer with 160 acres of land doing general farming. We believe that this applies today if it ever did apply.

It's Caging, I Think, Mr. Pering

I do not quite agree with Mr. Pering (on page 50, February, "In Regard to 'Leaving Those Packages Alone'") except where he says "if the queen could be shipped loose among her own bees." It's the caging, I think that counts. Mr. Pering's loss when he united large numbers of old bees to a small colony was probably due to the large number of bees as compared to the amount of brood that the effect of a failing queen was produced.

Geo. Harrison,
Virginia.

More About "Leaving Those Packages Alone"

By Alfred H. Pering
Florida

REFERRING to the article with the above title on page 50 of the February number, you will note that I expected to experiment further in February and March of this year if I could get queens and packages. Owing to the depressed condition of my part of the depression, due to the lack of funds and the lack of need for further increase, I did not carry out my experiment to any great extent.

However, here is what I did. I received two packages from the same shipper whom I had asked to do what he could to prevent the bees of one from becoming conscious that they were queenless even for a very short time and with the other to hold them positively queenless for at least an hour before placing the queen in their shipping cage.

The two packages came through in good shape attached to each other. I forgot to tell the shipper to be sure to mark the packages so I could tell which was which. I felt this oversight to have been quite a mistake on my part but perhaps it was not. One of the queens was promptly superseded. The other is still heading her colony and doing fine, but neither I nor the shipper knows which was tother.

I wasn't satisfied with that so a reorder was filled with each package properly marked. The result was about the same only this time we knew which package was which and I saved the queen by regularly removing the queen cells until the old bees gave it up, as I supposed. In addition to that, I received 3 queens through the mails in February, two of which were introduced to packages which I made up from my own bees, one package kept queenless for two hours and the other over night. I lost both of these queens in spite of all I could do. I think the bees just did away with them mostly because of what I did. They would not wait their destruction until they could get a cell completed let alone long enough to emerge.

The third queen was given to a package not allowed to be queenless for a minute. I saw to it that she first acquired the odor of the bees to which she was subsequently introduced. This may have had much to do with successful introduction.

From this, I am convinced that queenlessness or the lack of queenlessness has something to do with the losses from package bees, but I think that the investigation should be carried still further. I believe too, that the demoralization from being confined and shaken around in transit has its effects. My packages were not shaken up as those coming by mail or express would be.

My conclusion is that one of the laws of bee behavior is to rear a queen of their own, if there is a chance, just as soon as they can, if once they become fully conscious that they are queenless.

Macey's Store Has Honey Feature

Observation hives filled with buzzing, moving bees attracted crowds of interested observers to the 34th Street windows of Macey's huge New York department store during the week of March 20-25. Posters explained to the curious and the questioning the various steps in the making of honey from blossom to sealed cell.

Macey's, one of the largest department stores in the world, carries in stock in its grocery department, twenty-three different brands of honey. These were placed in conspicuous places in the grocery section on the eighth floor during the week, and on Saturday, March 25, Mr. Arthur Axtell, local beekeeper, demonstrated the various ways of using honey and answered questions about honey, bees and beekeeping.

The occasion of the bee display and the special effort at merchandizing honey was the annual week of Passover groceries at Macey's. The practice of carrying complete stocks of Jewish holiday ritual foods was established by the original proprietor of Macey's, and the custom was so popular among Jewish customers that it has grown in importance with the years.

N. N. Dodge.

Tool Case for the Outyard

By S. F. Haxton
Pennsylvania

With a cash outlay of 25 cents (5 cents for a pair of hinges and 20 cents for a padlock) I have just finished a tool case to make work in the outyard more pleasant next season.

No two beekeepers will have the same ideas about what should go into a tool kit, but mine contains a smoker, a supply of rags dipped in a solution of saltpeter and dried for starting the fire (after Dr. Miller), a folding wire bee veil for myself and a silk veil for the visitor, a hive tool, screwdriver, hammer, ¾ inch, 2d and 4d wire nails, hive staples, matches, queen cages, string, a folding handle pruning saw, a small plumb and level, a pair of scissors for clipping queens, carbolic cloths for clearing comb honey supers of bees, and a bottle of carbolic acid solution.

To house all this I secured a case which had contained canned fruit and made a cover for it like the telescoping cover of a bee hive, hinging it at the back. The entire case is covered with tin from five gallon honey cans, and given three coats of white paint to improve its appearance and make it weather proof. The bails of two cans were used to make staples at the front, which are locked with a padlock.

The inside is divided with a partition through the middle, the long way, and one of the compartments is lined with tin to make it fireproof inside and in it the smoker is kept, with a tin bin for smoker fuel back of it. The other half contains two trays, each 2½ inches deep and 4 inches wide, which fit one on top of the other, leaving under them ample space for the hammer, saw, etc. The trays are divided to fit the smaller tools so that, for the first few days at least, there will be a place for everything and everything in its place.

Comb Honey Cause of Granulation in Extracted

In some of the high-class grocery stores in the larger cities, bottled extracted honey, sold in 20-ounce jars, contains an attractive piece of cut comb honey occupying about one-fourth of the jar. This gives the consumer honey in both forms at one time.

If this honey is examined, it will be found usually to be sage or a blend of sage with orange blossom or other western honey. The reason why sage is used is that it does not granulate.

The honey producer who attempts to use clover honey—either white clover or sweet clover—in this way, is headed for trouble, unless the honey is sure to be sold and consumed promptly. For some reason the presence of the comb honey in the bottle promotes quick granulation of the extracted honey, even though the extracted honey has been heated to 160 degrees. The liquid honey must be cooled before it is poured over the comb in the bottle; otherwise the warm honey spoils the appearance of the comb honey. White clover honey which I bottled with comb honey in it granulated almost solid in three weeks, even though not exposed to much cold.

Producers of tupelo honey would seem to have an excellent opportunity to sell extracted honey in combination with comb.

S. F. Haxton,
Pennsylvania.

Moving Colonies of Bees

By T. E. Babcock
Connecticut

THE low price of honey and the need of bees by fruit growers make it easy for the beekeeper to get a profit from his bees from the fruit grower if transportation can be obtained without the loss of bees, brood, or honey. The prevailing idea of moving full colonies is that it is a large amount of work with some loss of bees and brood which many times forfeits the surplus crop and likewise the profit for the year.

For two years I have tried an experiment along this line with definite results. I moved seventy-eight colonies on automobile trucks sixty miles. The bees stayed in the orchard eight days and were moved back to the original apiary with no perceptible loss and with the same surplus gained or more than any other like colonies in the same location.

The method of transporting is simple and safe by ordinary automobile with proper springs on good roads. It is better to plan to start in the evening or at night when it is cool and the bees are in the hives so as to arrive after light in the morning when the hives can be unloaded and placed with less work than they could be if it were dark.

The only changes that the hives need are to make sure that there are supers enough on top so that the bees will not be overcrowded and there will be enough space to receive the apple blossom or other honey the bees get while they are being used for pollination purposes. Be sure that the hives are strong enough to move. Leave the entrance open the usual width and height and see that the bottom board is stapled to the hive body.

Raise the front of the hives so water will run into the hive on the bottom board, instead of out. Then take a sprinkling can or old teakettle and wet the front of the hives and the bottom board thoroughly two or three times. If it is dark, the bees are usually all in; if they are out the "rain" will make them go inside.

Cut out a piece of screen wire for each hive about four inches wide and an inch or two longer than the entrance to the hive. Also a piece of lath the same length as the entrance with one hole near each end of the lath for a wood screw. Set the piece of wire screen cloth slanting from the bottom board against the front of the hive, place the lath on it and press down towards the hive, and put a screw into each hole in the lath and in the bottom board. The lath should be left about an inch and a half from the front so the bees will get some air through the entrance.

If the cleats on the bottom board leave a hole under the wire at each end, or if there are no cleats there, take a piece of wet paper, cloth, or grass and push easily therein.

On the bottom of the truck, near the outside, place a plank about two inches thick and set the hives thereon with fronts out. This will elevate the fronts so water will run inside. If it it necessary to place another row or two between these, face the fronts together so as to give air space and as much room as possible at the entrances and raise the fronts about two inches. If a second or third tier is put above the first tier of hives (this is preferable to a center row), place thereunder two inches extra to elevate the front.

Secure the hives by ropes or in some manner, drive the truck on a level place and wet the fronts of the hives thoroughly before starting. As soon as the load is moving, especially at night, the air will be quite cool blowing across the front of the hives with the wet surfaces. The bees will come down and then crawl back into the cluster on the frames. If it is a hot night, stop every ten or fifteen minutes and wet the fronts again and continue until you have reached your destination. After you observe the way the bees are acting, you will know about how far to go before using more water. Remember to stop so the truck will be somewhere near level each time.

If I should close here, I can imagine some beekeepers saying, "You would lose some bees by crowding them at the entrance, then suffocating or melting down." Probably that is no but here lies the safety provision. There should be a good supply of water in cans or other receptacles to be refilled along the road where convenient. Also before starting, place cracked ice in some of the cans as well as in a separate container. I used about a half bushel each way for a trip of sixty miles with eighteen colonies. If there are many bees in the entrance inside the wire, sprinkle with ice water, and if necessary, lay some cracked ice on the wire and the bees. It is surprising how quick the ice water will quiet the bees, then the warm air will bring them back to life. They wake and shake themselves and go back onto the frames.

If a longer trip was necessary, a small can with one small nail hole in the bottom, attached to the front of each hive just above the entrance so water would drip therein should be provided. The can filled with water and ice just before starting would keep it "raining" during the journey and keep the bees from the entrance.

When you arrive, place the hives where they are wanted. Put a little more water on the screen wire if the bees are there, open up the entrance and the work is done until the same operation is necessary to return the bees to their original spot.

The apple bloom was larger than usual in May 1930. From three hives I took a super of apple blossom honey and extracted 40 pounds. After getting back home the latter part of May, only a little nectar came in and the bees used up the surplus apple blossom in the supers left on the hives and had a fine lot of workers for the sumach flow in the latter part of June and July.

Foreign Marts Open to Northwest Honey

By C. M. Litteljohn
Washington

Pacific Northwest honey is now finding larger markets abroad, as indicated by the impetus to honey exports in the recent statistics gleaned from clearances at Portland, Oregon, and the records of the Portland Merchants Exchange. Volume of honey exports shot upwards in August, when better business and a general trade revival was being reported from many parts of the country by diversified industries.

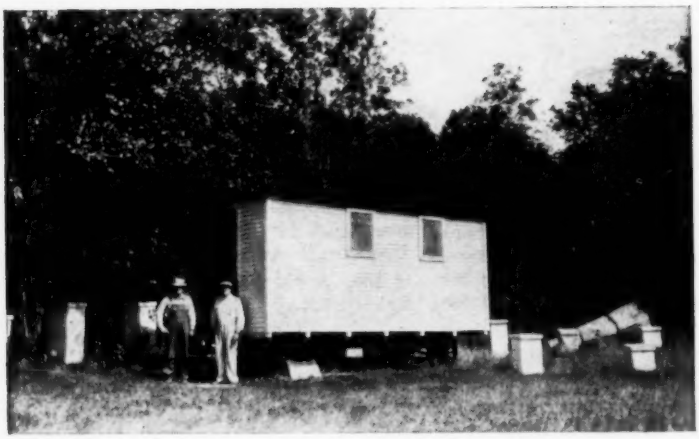
In the brief period from July 1 to August 25 there were shipped to foreign ports for the tables of various nations, solely through the Columbia River gateway, a total of 118,650 pounds, which is expected to boost the total of honey exports for the year from this gateway to an excess over last year, since the figures covering the fiscal year 1931 to 1932 showed a movement that totaled 186,050 pounds, but relatively little more than has been shipped during this brief summer period.

One of the recent cargoes, in the latter part of August, comprised a shipment of 6500 pounds of the sweets provided by the Pacific Northwest bees and the producers of that section, stowed aboard the "Loch Katrine," a British motorship of the North Pacific Coast Line. This vessel will take the shipment to the ports of England and Holland, where she docks.

Rich pasturage of the Northwest region, with its fireweed and clover fields, provides for a type of honey that is growing in export favor, as residents of distant lands and small gardens reach for the effective bouquet that permeates the amber product of the great open spaces.

Why I Use a Portable Extracting House

By Patrick J. McGlynn
North Dakota



J. H. Beatty, and P. J. McGlynn (in white), beside the portable honey house at one of McGlynn's apiaries, north of Fargo, July 1932.

SINCE I do not have a farm of my own and must depend on the generosity of landowners for pasture for my bees, I find that a portable honey house is necessary. The supers filled with honey do not have to be hauled over rough, dusty roads, resulting in super breakage and damaged honey. Since the territory here is crowding with beekeepers, the apiary must be located some distance from town and it would be expensive to haul supers back and forth.

Consideration must also be shown for the farmer who allows pasturing bees on his place. About 90 per cent of them do not care to have a beekeeper with his extractor and outfit close to their homes and to their watering troughs. Several times I have known of beekeepers who were ready to extract in a small building or granary on the farm and then the farmer would want it for his own use, after it had been all cleaned out for extracting purposes.

In a portable house, built tightly and screened, a great deal of unnecessary work is eliminated and a better feeling prevails between the farmer and the beekeeper.

Quite an impression is made on people by the condition of the place where honey is extracted. Visitors should always be welcome so they may be shown the product which you wish to put on the market. The beekeeper should show the best he has in his extracting room, such as new combs, clean tanks and vessels, and painted equipment; everything with a tidy appearance throughout. It is not a bad idea to have a small clean jar with the name of the apiary on a neat label and fill it with honey to present to the guests. It is a cheap way to advertise.

When I extract my first honey in my portable house, I ask the farmer and his family in. They are usually interested and I think a better feeling is established between us when he is treated generously with honey at an early date. I have found that prices for bee locations are usually not excessive under these circumstances, if there is any charge made at all.

Another reason I like a portable extracting house is that the honey can be extracted in my own apiaries, lessening the danger of disease by not passing through areas where there might be foul brood. The wet supers can be put back on at once, everything cleaned up and protected so mice will not injure them and dust will not cover them. When the extracting is over for the season, the extracting house can be filled with empty supers since it makes an excellent storage place for the winter.

I will now describe my portable house. It is built on an International chassis eighteen feet long, ten feet wide and ten feet high. It has two windows on each side and a four foot door at one end. It has a one and one-half horse power boiler steam line running back to the extractor. Under the extractor there are fifty feet of three quarter inch copper coil set against the bottom of the extractor to heat the honey when necessary.

No lawn mower here, but yet no weeds. The river is only a few rods distant.

By the time the extractor is emptied and filled again the honey is in fine shape for settling tanks. The steam is also used for the capping knives and the wax machines. No kerosene is used. The wax tank is made of copper and heated by steam and the wax is melted and flows into a large boiler. When I am through extracting my honey the wax is also melted, allowing the wax and honey to cool. The honey from the cappings is the same color and quality as that from the extractor and is not burned.

The pump and extractor are run by a one and one-half horse power gasoline engine and three tanks are used. No two day's honey is mixed so there is no possible chance of discoloring the honey. Samples of each day's run are taken and labeled as to date and when put into cases it gives me a chance to know just exactly what my honey is at different times of the season. The expense of keeping this record is very small.

One of McGlynn's yards, well sheltered by trees. Basswood, elm, and wild fruit.

Some Observations on Robbing

By James S. Ch'en

Aside from the general behavior of robber bees, the following was observed by the writer in the late summer of 1930 when a number of baby nuclei with newly mated queens were on hand. Being situated in such an over-populated city as Peiping, as far as bees are concerned, and with so little pasture for the foragers, robbing was unavoidable, especially in a queen-rearing yard.

On all occasions when a nucleus was robbed the queen was not killed, and the bees, instead of leaving to join the robbers, as observed by some authors, remained in the hive when the last drop of honey was being carried off. It looked as if the nucleus had run out of stores.

This can be explained by the fact that there was not much fighting inside and outside the hive, for a nucleus contained but a very small force and the intruders simply sleeked in. The queen, therefore, was not excited and not touched by the robbers or balled by her own bees. And as there was but comparatively little honey in a nucleus the last drop was carried off before a very large force of robbing bees flocked in. Therefore the excitement was comparatively small to induce the inmates to have the feeling of swarming or absconding, especially when their queen was with them and was not excited.

In many cases an attempt was made to save the robbed nucleus by giving it a comb of honey or feed it with syrup, but after a few seconds a few bees would be observed coming out fully laden and marking their locations. No searching bee was around and not a single bee had gone into the hive either from the entrance or from above at the time of giving the honey, and in a very short time robbing would start afresh until all the honey or syrup was carried away. This leads one to believe that after the last drop of stores is carried off some of the returned robbing bees station themselves in the robbed hive for some time, just as they would linger around the screened window of a honey house when extracting is going on, and incidentally act as detectives or resident news agencies who would report to their comrades of any "robbables" they happen to find afterwards by carrying a sample home. So if a robbed colony is to be saved, it must either be confined for at least three days after giving food or be carried to an outyard. Sometimes it would work, however, if the entrance were watched and the outcoming laden bees killed, provided there were not many, to prevent the spreading of the news.

It was also found that a long straw mat spread over and around the hive so as to make a long and large tunnel before the entrance would in many cases stop the robbers from trying to get in. Possibly it was because:

1. The appearance of the entrance was so much altered and so much lengthened with the large straw tunnel that most of the robbers would enquire at the open end of the tunnel and only a few would approach the entrance with a timid attitude on account of the changed appearance of their prey. The attacking force was thus much decreased, giving the robbed colony a chance to establish a defense.

2. The "robber followers" would take the straw as plants, thinking that their comrades had gotten their loads among them, and keep on searching the loose end of the mat. Naturally they would find their efforts vain and abandon that particular field.

China.

Winnipeg Free Press Gives Honey a Prominent Place

Through the kindness of Mr. Floyd, we have a copy of the Winnipeg Free Press of February 18th where, on the page of items of interest to women, a week's menu is printed for a family of five. Honey is given in the breakfast menu on Monday, Tuesday, Wednesday, Friday and Saturday, and in the supper menu on Thursday. This only leaves Sunday honeyless but we should not kick at that since the other six days all demand honey in some form. Incidentally this shows the honey mindedness of the public press in that fair Canadian city.

Samuel Cushman

AS announced last month, Samuel Cushman of Chicago died of paralysis on the evening of March 3. Mr. Cushman had a long and eventful career in beekeeping. He was one of the earliest teachers of beekeeping in the United States, teaching beekeeping and poultry keeping at the Rhode Island State College. We find him later at Baltimore, Maryland, as district sales manager for the Salisbury Tag Company. While located in Baltimore, Mr. Cushman was active in the affairs of beekeeping in Maryland; a long standing member of the Maryland State Beekeepers' Association, and a producer of comb honey. He made visits to a number of Maryland beekeepers and wrote much for publication at that time.

About 1920 he moved to Chicago in the employ of the same company, taking care of its business in that city where he has been active in business and as a beekeeper since that time.

Mr. Cushman was one of the leading members of the Cook County Association and an active member of the Illinois State Beekeepers' Association. He was one of our best comb honey producers; an original speaker and contributed much to our knowledge of comb honey behavior about which he wrote from time to time in the bee papers, particularly in Gleanings.

He suffered a stroke of paralysis in January, which left him nearly helpless and he died March 3 and was buried in Pawtucket, Rhode Island on March 7.

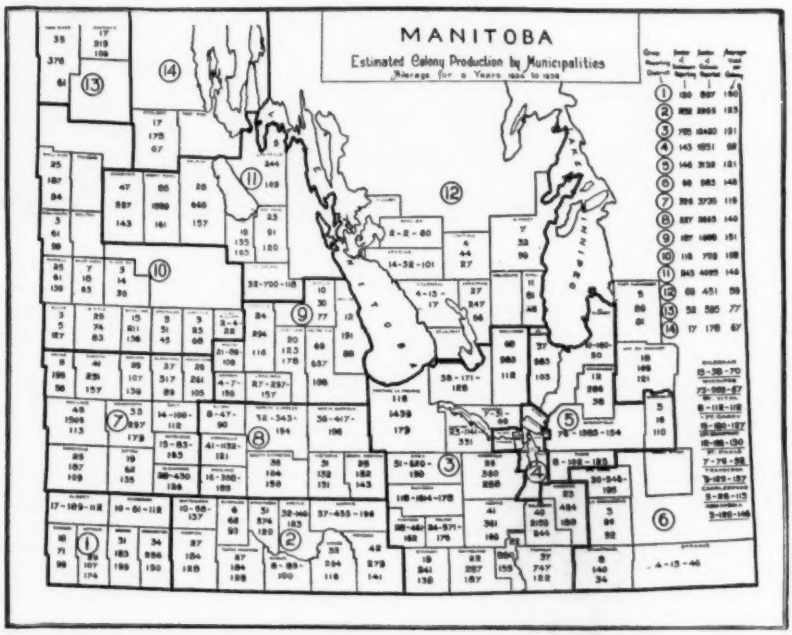
Manitoba Honey Producing Areas

By A. V. Mitchener
Professor of Entomology
University of Manitoba
Winnipeg, Manitoba

DURING the past nine years it is estimated that Manitoba has produced over fifty-two million pounds of honey. Many of our beekeepers who nine years ago produced a comparatively small amount of honey are now carload producers. During these nine years many new beekeepers have made their appearance and from the interest being shown at present, more producers and bigger producers may be expected in the future. Nearly all our beekeepers locate their apiaries on their own properties, but the time is at hand when some of our large producers are thinking of locating where there are prospects of getting the largest returns. In 1924 the writer began to bring together data on the yields in the various municipalities of Manitoba. A municipality corresponds to a county in many of our provinces and in the various states. This information has been accumulating each year since that time and now after obtaining the data for 1932 we have annual municipal yields for nine years. In all, data on over five million pounds of honey are involved in this discussion.

Each year the provincial apiarist sends out a questionnaire to the beekeepers of the province asking them to return information as to the number of colonies of bees kept, the total yield of honey secured for the year, etc. Many beekeepers send in this information. It is from these reports that the estimate of the annual crop is made. These reports have been turned over to the writer each year and have been analyzed and the information has been placed on a map for the year. Now after nine years all this information has been brought together and placed on a single map which is shown herewith. Manitoba extends from latitude 49° N. to latitude 60° N. Only that portion of Manitoba approximately between latitude 49° N. and latitude 52° N. is cultivated and it is that portion of the province that is shown on the map. The smaller divisions on the map are named municipalities, while the larger numbered areas enclosed by heavier dark lines are crop reporting districts.

In each municipality three groups of numerals will be seen. The first group indicates the number of beekeepers reporting, the second the number of colonies reported and the third the average yield per colony over the period of the nine years, 1924 to 1932 inclusive. As an example in the municipality of Edward in the south-west corner of the province during the nine year period eighteen beekeepers made returns upon 71 colonies which average 99 pounds of honey per colony. Similarly this information is shown for each municipality. The agricultural section of the province has been divided into fourteen crop reporting districts where somewhat similar agronomic conditions prevail. The data given in all the municipalities comprising each of these crop reporting districts which are numbered within circles on the map, have been brought together and an average yield for the nine years for the crop reporting area computed. The data for each such area are shown on the right hand upper portion of the map. As an example in crop reporting area 1, one hundred and thirty beekeepers submitted a report on 897 colonies for the nine years and for that period these colonies averaged 160 pounds per colony. Crop reporting area 4 is relatively small and includes the city of Winnipeg and suburban municipalities which are so small that it was necessary to show their data in a list at the lower right hand margin of the map.



This map indicates the relative honey yields for municipalities, and also for crop reporting districts. The municipalities are the small named areas. Three groups of numerals appear in each municipality. The first shows the number of beekeepers who reported yields, the second the total number of colonies owned by these beekeepers, and the third the average colony production in pounds of honey for the nine year period 1924 to 1932 inclusive. Crop reporting districts heavily outlined include many municipalities. These crop reporting districts are numbered within circles. The data for all municipalities within each area have been brought together and shown on the upper right side of the map.

These data show that beekeeping is prevalent over all the cultivated area of the province. All areas are not equally suitable for beekeeping. While it is true that any person wishing to produce honey for the home table can do so in any area, it is equally true that the prospects for the commercial beekeeper are much better in some areas than in others. The best area is 3 where a high average of 191 pounds per colony was obtained. This is a large and very important honey producing area of the province. The records indicate that the second best area is 1 where the average colony production was 160 pounds per colony. These two areas are followed in order by crop reporting areas 9, 11, 6, 8, 2, 5, 7, 10, 4, 13, 14, and 12.

Many factors have contributed to the reported average yields in the various crop reporting districts. Some of these factors are known and include both controllable and uncontrollable features. Doubtless some of the contributing causes of yields are unknown. Among those known and controllable appears to be the acreage devoted to sweet clover. Our statistics on crops for Manitoba published by the Manitoba Department of Agri-

culture, Winnipeg, gives estimates on the acreages devoted to the growing of sweet clover for each crop reporting district. Much of the sweet clover is grown for hay and as such contributes very little to our honey yields. It is of interest to note, however, that the largest per colony yield was obtained in crop reporting district 3 where the largest acreage per 1000 acres of taxable land was devoted to sweet clover. In this area for every 1000 acres of taxable land an average of 16.2 acres was in sweet clover during the past nine years. It is also of interest to note that those areas having the smallest yields per colony also had the least sweet clover. It is only fair to say, however, that the average yield per colony for each area did not in every case bear a direct relationship to the sweet clover acreage. It would appear, however, that sweet clover is a very important plant for the production of nectar and that our yields are very greatly influenced by it. The most common variety grown in Manitoba is white sweet clover. Some of the yellow variety is being grown also. This variety blooms approximately one week before the white variety. The more widespread use of the yellow variety would extend the main nectar flow to the advantage of the beekeeper. A new variety of dwarf white sweet clover has been developed by the University of Saskatchewan, Saskatoon, Sask., and has just been placed upon the market. From the viewpoint of the beekeeper this variety should be of great interest as it blooms a few days before the yellow variety. Anything that the beekeeper can do to extend the period of the main flow adds to his colony production and this variety appears worthy of consideration.

From the above discussion it is evident that a few colonies of bees located in any area in the cultivated parts of Manitoba will provide the family table with a supply of honey for the whole year. As crop reporting district yields vary from 59 pounds per colony to 191 pounds per colony it is evident also that all districts are not equally good from the standpoint of production. Those considering commercial production should compare carefully the various areas of Manitoba. Areas may be improved by devoting an additional acreage to sweet clover particularly if this clover is grown for seed or for pasture when it is in bloom over a long period of time. The more widespread use of yellow sweet clover will increase the period of the nectar flow as the yellow variety blooms about a week earlier than the common white sweet clover. The use of the new white dwarf variety will still further advance the period of the main flow as this variety blooms a few days earlier even than the yellow variety.

Mr. Knight -- Across the Water!

We are more than surprised to receive the final guess in the first Human Puzzle in the March number from T. Brambats, living in far off Latvia, on the Baltic Sea just west of the Soviet Union and north of Poland. He wrote us on March 21st right after receiving his copy of the Amercian Bee Journal. He says:—"The picture presented is of Jasper Knight, an extensive package bee and queen breeder at Hayneville, Alabama." That's a record for a correct guess.

Mr. Brambats is a beekeeper near Valmiera, north and east of Riga, the capital of Latvia. Get out your map of Europe and look up this country. I wonder if Mr. Brambats will be able to guess correctly again, at that distance?

Are Bees Guided By Scent?

By David G. Sanborn
California

As is well known to bee men, the organs of smell in the bee are located in the antennae. Persons who have observed bees have seen that they are guided largely in their movements by the sense of smell. While the writer does not claim that his experiments are original at all, yet some of them might prove of interest.

The writer has observed that when one antenna is cut off of a queen no change takes place in the behavior of the queen. However, when both antennae are cut off near the head, the queen,formerly held in high consideration by the other bees, loses all her influence, and it is observed that even the maternal instinct disappears; instead of the queen laying her eggs in the cells, she drops them in various places.

A young virgin queen is normally accepted without difficulty by any colony which has been queenless long enough to know its queenless condition. The writer has cut the antennae from a virgin queen about four hours old and put her on the comb of an observatory hive, and she was immediately balled. This was repeated with still another hive. She was then rescued from the workers and confined in the hive in an introducing cage containing candy, but died in a short time, probably of starvation, as I am quite sure that she was not stung by the bees in the ball, as she was taken out immediately and I did not lose sight of her. Although there was some candy in her cage, she evidently did not recognize it as food, since she was not attracted to it by smell, and on account of the loss of her antennae she was not fed through the meshes of the wire cloth where she was confined.

When the writer deprived the workers of their antennae, they remained inactive in the hive and soon deserted it, since they are attracted only by light. The workers from whom the antennae had been removed were marked to make it easy to follow their reactions, and they were then put in an observatory hive from which they had been taken. The other bees in the hive immediately recognized them and that there was something wrong; they gathered around them much as they surround the queen and repeatedly tried to feed them; however, the injured workers could not guide their tongues and consequently did not take food readily. The writer placed one worker with its antennae off on the alighting board of its own hive, but it was at once repelled and carried away by one of its own mates.

It was also noticed that drones act in a very similar manner, but are frequently rejected by the workers as soon as they are placed in the hive. As soon as the light was excluded from the observatory hive, although it was late in the afternoon and no drones were flying out, the drones from which the antennae had been cut deserted the hive, since light was the only thing which attracted them.

These observations lead to the conclusion that bees recognize each other very largely by scent, and also by touch. The workers and drones operated on were returned to their own hive, and it would be natural to assume that they would retain the odor of that hive. however, since they were not able to extend their antennae to the other bees, they were at once recognized as being different in some way and received different attention.

While it has been suggested that a bee deprived of its antennae loses the use of its intellect, it is the writer's observation that the intellect is in no way influenced by the operation, as the bee continues to respond normally to all sensations which it has the organs to receive. It was observed that light still attracted them as it did before. On account of the one-sided reception of stimuli, its actions, however, became abnormal.

Comb Honey

If foundation in the comb honey supers given in the morning is all drawn out to the corners in the afternoon, give a second comb honey super.

Geo. S. Demuth.

In Defense of an Outlaw

By Forrest L. Meuret
Nebraska

TODAY there are three leading races of bees, all of them with one or more serious faults and all with their virtues. Our problem is to select that race whose faults are most easily controlled and whose virtues are most outstanding.

Most beekeepers have stayed with Italians. Their faults and their needs are so well understood that the average beekeeper does not notice them until he tries something else. When he is confronted with a new problem which he does not understand he decides that the new race he is trying is not so good and he is soon back with his old strain of Italians.

Either of the grey races have the following advantages: (1) They are more prolific and build up for the main flow without stimulation. (2) They winter better. (3) They fly at low temperatures. (4) They build beautiful white capped combs by simply raising them a fraction of an inch from the honey below. (5) They are industrious, long lived, and gentle.

The objections to the Caucasians are: (1) The sticky mess of propolis with which they plaster everywhere and track up their otherwise perfect combs. (2) Those accustomed to Italians complain that they cannot recognize mismating.

The objections to the Carniolans are the same with regard to mismating because of the similarity with the common black bee. It is further complained that they swarm to excess. That is their one serious fault. As soon as swarming is over they work with unequaled vigor. No bee is a good honey gatherer when putting her entire attention on the business of swarming.

I have a system which I have tested on a small scale and which has proved successful. It simply removes the desire to swarm without hindering any other normal activity.

It is a well known fact that a colony of bees with a young queen seldom swarms—that is, a queen which was reared and mated in the spring of the same year. Carniolans will swarm, however, even with these young queens.

They must be given a new queen early in the spring and they will build up to maximum strength too soon for the sweet clover flow and, in the sweet clover area, they may be divided at the right time so that they will again build up for the main flow but not before. They will not loaf. If they are strong and have nothing else to do, they swarm. Sometimes they swarm anyway, whether they have a young or an old queen.

This method of dividing necessitates a heavy uniting program in the fall or we would find the number of colonies increasing too fast. I use a one and one-half story brood nest. In uniting I intend to unite every other colony with its neighbor, except a few which I will keep for increase, and I probably would extract the two shallow supers, leaving a two-story colony for winter.

In localities with an earlier flow than sweet clover, I believe good results could be obtained with this race by forced supersedure.

Either way I would use a manipulation which I have already found satisfactory. It must be remembered that a Carniolan queen requires a one and one-half story brood nest. An industrious over-wintered colony will have this brood nest full by the first of June and I mean full. These queens lay in all four corners, against the very edge of the wood unless they are blocked by honey, even sometimes to the outer edge of the outside frames.

I am confident that with a little packing these heavy colonies would stand Canadian winters. If kept from swarming, the Carniolans will get more honey because they have huge colonies of bees with which to get it.

Nature Ramblings -- Catkins

This is the season of catkin-blossoming trees. There are still a few pussy-willows to be found, the birches are trailing their long, caterpillar-like flower-clusters, and the first really warm day brings a shower of "red neckties" from all the gentry of the cottonwood groves.

Botanists reckon trees that bear their flowers in long pendulous clusters after this fashion as the primitives of the woody plant world. A catkin is about the simplest assemblage of flowers that one can well imagine. There are no bright petals, no green sepals; only the bare necessities of pollen-producing or seed-bearing structures, strung irregularly or in a spiral along the central stem or axis.

Some of the catkin-bearing trees have only male, or pollen-producing, flowers on one individual; and only female, or pistillate flowers, that eventually bring forth the seed, on another. This is the case with the willows and poplars, and explains why some cottonwoods do not "shed cotton," but instead litter up the lawn and walks with "red neckties" or "caterpillars." In other species, like the birches, male and female catkins are borne on the same tree, but only the male flower-clusters are conspicuously trailing objects. The female catkins show up very little in the spring, and have their innings later on, when the seeds are ripe. Then they shed their hard little green scales in showers like a kind of summer show.

The catkin-bearers, though primitive, are none the less important members of the tree world, for they include, among others, walnuts, oaks, beeches, willows, birches, chestnuts, ironwoods and hazel bushes.

Strong Colonies Rout Bee Moths

By D. C. Swigart
Nebraska

I have about 100 colonies of bees and I think I have solved the moth problem. In the first place we must not think too much of a colony of bees even if they have a new queen. Every fall I go over my bees carefully. If I find a colony without enough stores to winter, I kill it, put the honey and hive away, shut up tightly, until I have a swarm the following spring.

If the colony has an extra good queen, I sometimes kill an old queen in another colony and put one hive on top of the other until they unite and then remove one of them so I never have weak colonies to go into the winter.

Moths used to start in my hives with weak colonies in the fall and when once started, they would even tackle pretty strong colonies and by spring, the apiary was alive with millers and trouble began. As soon as the honey season is over, I dispose of all colonies that do not have a hive full of good drawn combs pretty well filled with honey. I have had no moth trouble for five years.

[Your way of keeping out moths is right in line with the old advice that "a strong colony of bees will not tolerate moths." When you go over your bees uniting weak colonies with strong ones, whatever moths may be in the combs are at once cleaned out and the weak colony adds itself to the better one. Later a division or a package, placed on the extra set of combs, will keep them in use without that sad destruction which so often hurts the eyes in many apiaries.—Ed.]

Twenty-five Hundred Dollars for One Lesson in Beekeeping

By M. G. Eldred
Illinois

QUITE an expensive lesson! you say—and you're telling me? But here's the story.

In order to try and be of assistance to some one contemplating starting in the bee and honey business, I will, as briefly as possible, tell how and why I started and what to avoid after being established.

Picture if you will, a small lad, born and brought up in the country, more fond of watching the bees on the blossoms in Mother's flower garden, than of carrying in the wood for the kitchen fire, who at the age of seventeen had absorbed the idea of being a "Big Shot"—a traveling man—and living in a big city and after thirty years of almost superhuman effort to hold down a job and raise a family, found himself at middle life, broken in health and spirit and obliged to move to a distant suburb to try to recuperate.

Locating on a new subdivision, developing from a dairy farm, here was my opportunity to put in practice some of the things I had been studying and reading about in books and magazines on that most interesting of all subjects—Bee Culture.

From a supply house, I ordered enough knocked down equipment to make two hives, two full depth supers and four half-depth supers with tools, gloves, wire screen bee veil, smoker and so on, including two three-pound packages of bees with untested queens. I nailed and painted the outfit, selected a sheltered location, installed the bees according to directions and prepared to continue my studies with first hand information from the bees themselves and incidentally to supply the table with that finest of all foods, comb honey.

We located on a highway where there was a great deal of traffic and as the hives could be seen from the road and any one having beehives was supposed to have honey to sell, people were constantly stopping to buy honey.

As a matter of fact, as a matter of self protection, I was compelled to buy honey and furnish it to the transient trade, in bottles and pails. This gave me the idea of raising honey for the market. Consequently I built a roadside stand and ordered another nest of ten hives and supers in the same proportion as the first lot, ten more three-pound packages of bees; installed the bees in the hives on foundation and when not busy working with the bees, spent my spare time studying bee problems.

Five years passed quickly and I had increased my apiary to sixty colonies, had invested in a hand power extractor and steam heated uncapping knife and capping melter and in spite of the fact that the bees were producing better than two tons of surplus honey, I was obliged to buy considerable honey to take care of my growing market.

I built a honey house, built and installed machinery to lighten the labor, for I was doing all this labor in my spare time after commuting sixty miles daily to and from the old job in the city. This thing which I had started as something to play with, had grown to be somewhat of a problem to handle. However, we were deriving a nice revenue from the sale of honey and that covers a multitude of stings.

Then another beekeeper (? ? ?) moved into the neighborhood, one of those birds who "never wears a bee veil or gloves when he works with bees" who swarms his bees with a shot gun and who thinks a Bee Journal is part of an old Flivver—well "it" moved in and the first thing I knew, several of my best colonies were infected with A. F. B.

This did not discourage me as I knew from my studies, that there was such a germ pest, and how to tell it when I saw it.

I also knew, that anything and everything that comes from the earth, has an insect or germ pest to fight. For instance, the truck farmer who raises potatoes, squashes or cucumbers, must fight bugs; or if it is cabbages, tomatoes or tobacco, he must fight worms; the orchardist must spray his trees to destroy scale; the chicken raiser must vaccinate his chickens for roupe and cholera; the cattle breeder must fight tuberculosis; the hog raiser, cholera; and the dog fancier, distemper. But I also knew, that most of these pests cannot be eradicated but must be fought year after year with no hope of a letup, while A. F. B. can be eradicated and if there is no infection from outside sources, it will not recur.

I had a long hard fight on my hands. I experimented and studied all the known systems of A. F. B. eradication and finally, from several systems, worked out one that got the results I was after and I was able to sterilize combs that had contained this dread germ.

I shook the bees from an infected colony into a clean hive body and left them there for two days, then installed them on frames of foundation in another previously prepared hive and let them draw out the combs and build up again.

I cut out all combs that had contained brood or pollen and boiled the frames in strong lye for half an hour, renailed and filled with foundation and they were ready for the bees.

Combs that had been used for honey only were used and were gone over carefully four or five times to be sure that every cell was uncapped, then the combs were soaked in water for twelve hours to remove all the honey and extracted.

They were then soaked in a solution of formaldehyde, glycerine and water for forty-eight hours, extracted and soaked in a solution of ammonia and water for thirty minutes to neutralize the formalin, extracted and dried and given back to the bees.

The sterilizing solution was as follows; to two gallons of formaldehyde add eight gallons of water and one gallon of glycerine. This is enough solution to sterilize ten frames, the neutralizing solution is a 10% solution of ammonia and water.

The sterilizing solution may be used several times if kept in a tight keg when not in use.

All the hives, bottom boards and inner covers, were scraped with a hive tool to remove all wax and pollen and the hive bodies thoroughly saturated inside with gasoline, piled five high, a lighted match thrown in and when the paint had burned off and the wood slightly charred, a cover was put on to smother the blaze, any parts not scorched black were gone over with a blow torch, including the inner covers and bottom boards, sandpapered all surfaces inside and out with No. 3 paper, painted outside and inside with white lead and oil, and thoroughly dried.

BUT REMEMBER THIS — One drop of infected honey left where the bees can get it, one cell not uncapped, or a little carelessness, will undo all your hard work and planning.

Everything would have been all right if I had been satisfied to have let well enough alone, but I found that a formalin solution was a tough proposition to work with especially in warm weather, and being of an experimental turn of mind, I thought I could invent a solution that would not be so hard on the eyes and lungs and would still give the same results as the formalin solution.

Knowing nothing of chemistry, I went to a teacher of chemistry in one of our largest medical colleges and was informed by him, that a 20% solution of Sodium Hydroxide and water, would positively kill any germ and that the solution could be neutralized by dipping the combs in a 10% solution of Hydrochloric acid and water.

This seemed to me to be the

answer to my problem and consequently I tried it out and found that this solution would clean the frames of all stain and propolis and even dissolve the cocoons in the cells that had contained brood, leaving the wax white and clean (? ?).

Consequently I put 2600 combs through this solution to make sure that all my combs were sterilized thoroughly and gave them back to the bees.

At first I was highly gratified at the results, the bees accepted the combs readily and started brood raising, several weeks later I found signs of recurrence and again put those infected colonies through the mill. [Chlorine treated combs show this same recurrence.—Editor.]

I was busy putting on supers and taking off honey for the balance of the season and being reasonably sure that everything was O. K. I did not give the bees my customary inspection.

One day the Deputy Inspector called and looked over the apiary. I was not at home, but his report was anything but pleasing and **upon my own inspection I found nearly every colony badly infected the worst I had ever seen.**

Upon the advice of the Inspector, I killed all the bees using a spoonful of Calcium Cyanide (Cyanogas) sprinkled in the hive entrance, gathered all my precious bees in one grand funeral pyre, covered them with wood and burned them up.

Then I cut out all those 2600 combs and sent them to the mill to be rendered, boiled the frames in strong lye, renailed the frames and filled then with foundation.

All the other equipment was treated as I have described above and two formalin sterilized combs placed in each hive and the balance of the space filled in with eight frames of foundation.

On May 1st I installed twenty-five three-pound packages of bees with untested queens in these hives and was greatly surprised to see how quickly they drew out the combs and as we fortunately had a good honey season we took off 3000 pounds of fine Illinois No. 1 white honey.

There has been absolutely no signs of A. F. B. since and barring accidents, I don't think there will be any recurrence.

In conclusion let me beg of you! Don't experiment with A. F. B. As far as I know, there are but two substances that will kill the spores of this germ, Formaldehyde gas and fire. I have read recently that American Foulbrood germs will live in carbolic acid, so don't experiment unless you are a **chemist** and then don't experiment.

Here endeth the first lesson.

From the Little Blue Kitchen

MOTHER'S DAY VERSE

Who wears a flower for Mother's Day
  Doth honor one who is his friend
From the beginning of life's way
  Through every mile—unto the end.

To him she stands for something more
  Than sweetheart, sister, pal or brother
Because God placed her first Himself—
  This glorious being, called a mother!

So wear a fragrant, bright-hued flower
  If yours is still with you on earth,
Or else a snow-white blossom wear
  For a dear saint of Heavenly worth.

And as that day you tribute pay
  Such as one cannot give another,
God's smile will gently rest on you
  For he loves God who loves his mother!

—Lida Keck-Wiggins.

— : —

MAY the 14th is Mother's Day! Honey Lady hopes every reader of Blue Kitchen will remember the date and do some little thing to honor that best friend of mankind . . . Mother!

— : —

Mother's Day, or the month in which it occurs, is an appropriate day to think for moment on universal peace. When one reads the papers this seems far off, but to those with an inner vision all these upheavals, wars, financial troubles, earthquakes . . . may perhaps signify that darkest hour which is just before the dawn. Speaking of universal peace reminds Honey Lady of a call she had not so long ago from a beautiful mother and a notable peace advocate, Mrs. Francis K. Allen, designer of the seven pointed peace flag. What has happened to it and to her is in itself a long, fascinating story; what interests us as Blue Kitchen readers, and advocates of that element of peace symboled by nothing more truly than by the sweetness of honey in the honeycomb, it is of passing interest to know that Mrs. Allen got her inspiration for the peace flag design while washing dishes . . . the rainbows made by the suds signifying the colorful design of the flag which uses all the cardinal hues, and thereby covers all the colors used in the flags of nations. In the center of the seven-pointed star is a white space wherein is printed the Golden Rule.

Mrs. Allen is a merry soul, as are all whose hearts are at peace, so she told Honey Lady this when sitting with her in Blue Kitchen watching the outcome of a recipe which will be given you in a moment:

"Do you know," Mrs. Allen said with a twinkle in her blue eyes, "what the latest style of hat-trimming is?" "No," said Honey Lady, "What?" "Bees," laughed the guest. "Bees?" cried Honey Lady, on her toes instantly. "Yes, see?" and with that Mrs. Allen turned her head and showed a very smart looking silver bee perched on the side of a chic spring hat. "So," said Honey Lady, "the women are going to go 'round with bees ON their bonnets instead of IN them, eh?" "Yes," said Mrs. Allen all seriousness again, "that's why I like the new hat trimming, it really stands for peace instead of war, you see." Honey Lady saw!

— : —

And now for the recipe we were working out as we talked. You'll like it if you try it. See if you don't, frosting and all.

Uncle Sam's laboratories worked it out first, and they pretty nearly know their honey. Yes? The name of this dessert is Butter Honey Cake, and this is the recipe Blue Kitchen proved to be truly delicious and "different."

Butter Honey Cake.

1½ cups honey.
½ cup butter.
3 egg yolks.
5 cups flour.
2 teaspoonfuls ground cinnamon.
½ teaspoon salt.
1½ teaspoons soda.
2 tablespoonfuls orange juice.
Whites 3 eggs.

(In this recipe if no oranges are at hand, extract of orange mixed half and half, i. e., one tablespoonful of water and one tablespoonful of extract will answer very well.)

Directions.

Rub together the honey and butter, add the unbeaten yolks and beat thoroughly. Add the flour sifted with cinnamon and the salt, and the soda dissolved in the orange juice (or orange extract and water mixture). Beat the mixture thoroughly and add

the well-beaten whites of the eggs. Bake in shallow tins and cover with frosting made as follows:

Orange Frosting for Butter Honey Cake.

Grated rind 1 orange.
1 teaspoon lemon juice.
1 tablespoon orange juice.
1 egg yolk.
Confectioners' sugar.

Mix all ingredients but the sugar, and allow the mixture to stand for an hour. Strain and add confectioners' sugar until the frosting is sufficiently thick to be spread on the cake.

— : —

Would you be interested in a new way Honey Lady filled a recipe for potato salad? This salad requires sweetening, so instead of putting in the specified amount of sugar she substituted honey, and had you cooks been present and seen the three men guests take serving after serving of that old-time salad with the new element, you'd know what to have next time your husband asked a few friends in for dinner. Here's the recipe. Use honey in proportion to your taste for sweet.

The Salad.

Peel and boil in salt water, 6 good-sized potatoes.

Chop two good-sized onions.

Boil two eggs hard.

Then cut onions, potatoes and eggs up together in cubes. Honey Lady uses her food chopper . . . coarsest knife . . . which makes all pieces uniform size.

The Salad Dressing.

1 teacupful of milk.
2/3 cup vinegar.
½ teaspoonful salt.
2 tablespoonfuls extracted honey.
1 tablespoonful of butter.

Directions.

Mix together the honey, milk and salt; then add the vinegar slowly, drop by drop; then stir in butter, which melt first. When fully blent, place over slow fire, and stir until mixture thickens. Then pour over potato, onion and egg, and mix thoroughly. Set away to cool.

Honey Lady made a really picturesque dish of this salad by garnishing it with a border of parsley and pressing into the top slices of eggs pickled in beet juice.

The amounts given in this recipe will serve about four **hungry** people. It was doubled for the dinner above mentioned, and there wasn't a great **deal** left! Temper your amount to the appetites of your "boys."

— : —

Next time you make rhubarb pie sweeten it with honey! A delicious morsel; also a fine spring laxative.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

BEES AS A PURSUIT

An industrious young man has asked me to finance him in the Bee Business. He wishes to start on a small or moderate scale and enlarge as he can.

Is it a desirable business for a young man to engage in? I mean can he build it into a profitable business? From the standpoint of honey production?

FLORIDA.

Answer—If your young man is in the vicinity of large honey producer, he had better go to work for him and learn the business.

If he cannot do that, then he had best locate himself in a good honey producing vicinity and read some books and go to work on a comparatively small scale until he learns the ins and outs of the handling of bees. There is money in the business, as we have proven it to ourselves.

GRANULATED HONEY IN COMBS

I find in the cells of the combs quite a bit of granulated honey that the extractor naturally failed to throw out.

What I want to know is this. Would the bees clean these out for brood rearing or storing the coming harvest, satisfactorily?

NEW YORK.

Answer—The bees will be likely to remove that granulated honey. But if they delay in doing it when the combs are in their hive, just moisten the parts that have the granulated honey a little and the bees will do the rest.

If they have no moisture, they are apt to throw the grains of hard honey out of the hive.

DEQUEENING TO PREVENT SWARMING

In dequeening to prevent swarming which is preferred, caging the queen within the hive for ten days, or take her with two frames of brood and keep as a nucleus ten days; if caged within the hive where cage is placed, thrust in at entrance or on top of brood frames? If I place on top of brood frames this would require the removal of one super frame to make room for it, and if placed between brood frames would require removal of one frame of brood to make room for cage. If kept as nucleus ten days would there be danger of queen being balled when she and the two frames are returned to the hive? When queen and two frames brood are taken from the hive to be kept for ten days is it necessary to close entrance for a day or two to hold this nucleus?

Excluder plan. The queen and one frame containing some brood and three empty frames in bottom hive balance brood on top of exaluder while doing this it would be necessary to shake the combs in order to be sure of finding all queen cells, would it be all right to shake them in front of the lower hive containing the queen?

Ventilation as a help to prevent swarming. It is recommended to place the hives on eight inch blocks at beginning of swarming season, and to prevent hanging out of bees. In this locality the main swarming season is over by the time it is hot enough for bees to cluster out at entrance, some nights being rather cool, especially during the earlier part of our swarming season. Under these conditions would it be advisable to place the hives on blocks this early? We had a frost yesterday morning 4th, and a neighbor had a swarm issue about one o'clock p. m.

ALABAMA.

Answer—I have no faith in the removal of the queen to prevent swarmings, whether you remove her altogther or cage her on separate frames. The bees of the hive are likely to wish to rear another and will swarm with the first young queen that hatches.

Shade ventilation such as you describe and plenty of room for brood and honey are the best requirements. Do that and take chances. It is less work and more positive than queen removal.

CHANGING QUEENS

I am just starting with bees. I have two hybrid swarms and would like to change them to Italian or Caucasian by putting in new queen.

Would you please tell me which of the two bees you prefer or think best, and, if this can be done and how?

(2) Is it necessary to feed package bees if received at time of honeyflow?

ILLINOIS.

Answer—(1) We prefer the Italian bees, because when there is some mismating with common or black bees it is noticed more easily. The Caucasian bees are a grey bee and although they are about as valuable as the Italians, their mixing with the common bee is less easily detected.

(2) If you get package bees during a honeyflow, it is not necessary to feed them on arrival unless there is some rain or a lull in the flow. This may be easily detected. In doubt it is best to give them a slight amount fo food.

KILLING MOTHS

If one uses Carbon Bisulphide, Cyanogas, or Para di Chloro Benzine to kill Wax Moths, in supers that are piled on top of each other in the open air with a hive cover on the top and bottom, will the gas generated be sufficiently strong in the open air to kill the Moths and Eggs?

Some time ago I read in a Bee Journal of someone building a separate house in which to store his surplus combs safely away from the Wax Moth. Have you any suggestions or ideas on the detailed erection of such a house?

NEW JERSEY.

Answer—We do not use the drugs you mention in treating combs for moths, but just common brimstone which we burn under the piles of combs, taking care not to set anything afire.

We have a bee house for both keeping the combs and extracting honey. We also keep our honey in it between harvesting and selling.

There is no particular requirement in building a honey house except to make sure that neither bees nor moths, nor mice can enter. Tight fitting walls are the only thing to make sure of. The windows are supplied with screen, so that it is perfectly safe against all insects.

FORCING SUPERSEDURE

I have read lots about preventing swarming by forced supersedure just before the main honeyflow by grafting method but as this requires quite a bit of skill and time as well as equipment, I am wondering if forced supersedure cannot be brought about at the beginning of the honeyflow with less trouble. If I put the queen in the top story over an excluder and two or three supers and fill the lower story with frames of foundation and one new comb containing eggs from the queen I wish to breed from, and that are only a day old, would the bees not go ahead and build Queen cells there and thus supersede their Mother who is in the top. If so, I could destroy the old queen after the new one has started to lay. If this would work it seems to me it would be much easier for a side-line beekeeper.

WASHINGTON.

Answer—The method you suggest will work fairly well. Only if the bees are too

anxious to swarm, they may let the queen leave anyhow.

Our method of preventing swarming relies on three or four conditions: plenty of room for breeding, plenty of surplus room, absence of drones and young queens. Your method relies entirely on having a young queen in the hive.

The absence of drones is quite important at time of swarming. For that purpose we remove all drone comb early in the season. Of course it is quite difficult to prevent entirely the rearing of drones, but if the drone comb is replaced with worker foundation, there will be very few drones reared.

SOWING SAINFOIN

I have been very anxious to sow some sainfoin (Onobrychis sativa) Clover this spring. After writing several seed firms I have just about become discouraged in finding any seed. Can you suggest where I might buy this seed? Do you know of any of our Agricultural Colleges that might have a bulletin on this clover?

INDIANA.

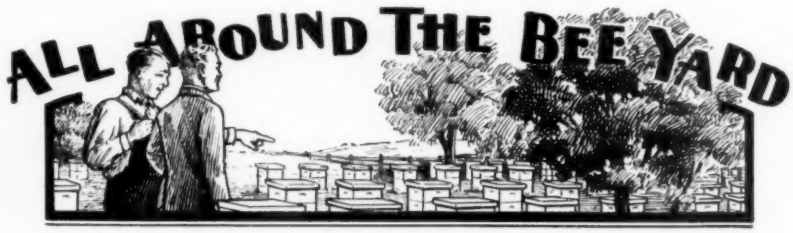
Answer—We have been unable to secure sainfoin seed and the trouble is that there is a regulation against importing seed, which is evidently for fear of importing also some noxious weeds. At any rate the seedsmen of Europe, as far as we have ascertained, do not wish to do any exporting. So if we wanted to buy seed in Europe, we would have to bring it ourselves. If any of our readers can direct us to some sainfoin seed dealer, we would be glad to publish the information.

MILDEWED COMB

If old combs are slightly mildewed or mouldy, will the bees accept them?

CALIFORNIA.

Answer—If you will put slightly mildewed combs one at a time, in the center of a strong colony of bees, they will dry up those combs and render them as good as new in a very short time. We never destroy combs that are slightly mouldy.



By G. H. Cale

SEEMS like I never saw more bees and a greater amount of advancing brood in April than this year. It would be profitable to make early divisions without much setback to the colonies. Our plan is to take one comb of sealed brood and bees from each colony that will afford it and make 4-frame divisions with a new queen, moving them to another yard to prevent bees from returning to their old hives, thus keeping the divisions strong and full of bees.

Divisions so made move forward rapidly and often make considerable honey the same year. With colonies as strong in bees and brood as they now are, the opportunity to do this is excellent.

— o —

What about the early queenless and drone laying colonies? Are they worth petting?

We have answered this in the negative. Dispose of them as soon as possible. Break them up and shake the bees off in front of the nearest colony if the hives are free from disease and save the combs for either increase or packages. It is not a bad plan to remove all colonies in fall, not in prime condition for winter, store the combs and add this spring's quota of queenless or drone laying colonies. Then provide packages or increase to fill up the equipment. Do not bother with the indifferent colonies. It cuts down the cost a great deal.

Right now, the new young grass in yards where grass is the prevailing growth, looks nice and green. Pretty to behold—but later!

When we remove the two paper wraps from colonies, it is convenient to fold them into large squares to lay on the ground. Set the hives on top. They keep down the grass for a distance of six to eight inches away from the sides and fronts of the hives so, when weeds have become rank and grass high, if you do not get back to the yard to cut away the tall growth, the bees will have a fair chance to get in and out of every colony. These grass protectors will last about two years.

— o —

It is strange how much effect weather has on bees. It is almost impossible to advise the beginner how to work because of it. Sometimes in spring, when robbing would normally be bad, it is possible to choose a cool, cloudy day to do work which could not be done when bees are flying freely. On a day with bright sunshine, a bit cool and a fair wind, one may examine all the colonies in the yard without inviting any robbing, if reasonable care is used, but on a still, warm, sunshiny day it would not be possible to look over more than a few colonies in the early spring, without robbing.

And what a mess robbing is once it gets started. I well remember being with C. L. Sams in North Caro-

lina once when a hasty message of grief by wire was received at Raleigh from a mountain beekeeper who had a case of robbing on his hands which Mr. Sams afterwards said was "horrible." The bees were simply walking away with the yard. The owner unwittingly started robbing without realizing it, being a new beekeeper and before he could stop it, it had gone beyond his control.

In such a melee as this, how easy it is to spread disease and how hard it is afterwards to get satisfactory work done in a yard where robbing has once been established as a sort of a spring merry-go-round. Up to the time of the flow, better leave the bees alone after a mess like this.

Will Honey Fit in the Ration of the Farm Animal?

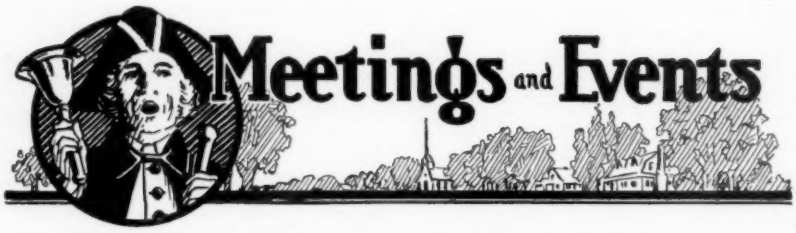
We talk so much about the diet value of honey for human beings. Can it be there is a place for it also in the diet of the farm animal?

Two instances have come to our notice; one reported by Lee Stewart of Newport, Indiana, who is a specialist in a number of things—bees, poultry, flowers and vegetables. Lee has experimented with the use of honey in mash for poultry and finds, he believes, certain beneficial results, enough to make him enthusiastic and to wish to see something done by feeding experts to determine just what the effect is.

The other is reported from a newspaper clipping sent in by Frank J. Dolizah, Ely, Iowa, from the Cedar Rapids Gazette of Wednesday, February 22nd, which reports the result of feeding honey to cattle by John Koester, beekeeper and stock feeder, near Williamsburg.

Molasses has long been favored as an appetizer in a steer ration. Since Mr. Koester's honey this year from his apiary of 22 colonies found a slow sale due to general economic slackness, rather than buy molasses, the home grown sweetener was used during the last four weeks of the feeding period. The honey was mixed with water and fed twice a day spread over the grain in the bunks. Five pounds of honey was fed each day four weeks before the cattle were shipped. The honey-fed Angus steers developed such a finish and bloom that they attracted a bid of $7.10 on a day when $7.00 was top for the choicest beeves. Mr. Koester plans to continue this experiment, depending on the relative values of honey and feed, since he is well pleased with the results this year. The honey was of the finest quality, the best clover honey obtainable.

Now we ask again, what is there in it and will some expert in nutrition find out for us?



Laws Effecting Idaho Beekeepers

By Walter L. Clark
Idaho

Beekeepers of Idaho must apply for licenses at the State Department of Agriculture before May 1 under the terms of a new law passed at the last session of the legislature. Under this bill, the Idaho state horticulturist is also state bee inspector. He has thirty-two deputies now at work over the state in an effort to control foulbrood.

The new regulations also reduce inspection fees and beekeepers now will have to pay 3 cents per colony instead of the former fee of $1.00 minimum charge for one to ten colonies and 3 cents for each additional colony over ten. Idaho beekeepers must file an application for state license, upon the issuance of which a number is assigned to each beekeeper with a license card which must be tacked up in each apiary. Those with more than one apiary must secure license cards for each one and place the cards in evidence in each apiary.

Under the new law, the inspection fees will be placed upon the county assessment rolls and will be collected by county officials in the same manner and as part of other taxes on personal property.

The Idaho State Department of Agriculture has been informed that many beekeepers will need financial assistance the present season. In some cases at least this will have to come through the Agricultural Reconstruction Finance Corporation. A certificate of Inspection will have to accompany each application showing that the bees have been inspected by a state inspector, but under the present law, there will be no funds available for this work until taxes are paid in the fall so it is suggested that when such service is required the expense be borne by those who call for it.

The department plans to put back into each county for its local expense, all funds derived from that county where the bees are located that have paid the cost for inspection service the present season so those who pay may receive service in proportion to the amount named there.

Beekeepers of Hudson Valley Combine

At an all day meeting at the Hotel Campbell, Poughkeepsie, New York, Dutchess County, the Hudson Valley Society of Apiculture was formed. There were more than forty-three beekeepers present, representing every county in the Hudson Valley. It is planned to hold at least two large meetings each year, one in summer and one in winter.

Clarence S. Rowe, of Kingston, was elected president; Walter B. Crane of Dover Plains was elected first vice-president; L. D. Martine, of Milton, second vice-president; and Francis Stillman, of Cornwall, secretary-treasurer. The first directors are Jerry Lasher, of Columbia County; R. H. Hillman, Dutchess County; Henry Kroger, Bronx County; Floyd Dyer, Orange County; Paul Traphagru, Greene County; Albert Law, Ulster; Dr. C. H. Dunn of Westchester County and F. D. Gravely of Manhattan County.

Cook DuPage April Meeting

The second meeting for 1933 of the Cook DuPage, Illinois Beekeepers' Association was held Monday, April 3 at the Gage Park Field House, 55th and S. Western Avenue. Mr. Wooldridge spoke on our state appropriation and Mrs. Duax on the benefits of the American Honey Institute and Mr. Young on how to increase our membership.

The price of honey was discussed and some interesting facts brought out. One by Mr. Hofmann, the unfair competition of Wisconsin beekeepers who use Chicago as a dumping ground for surplus honey to demoralize the market.

It was suggested that we try to obtain 65 cents for a 5-pound pail retail. Outdoor meetings are planned for the summer.

E. J. McCormick, Secretary.

Spartanburg County, S. C. Meeting

C. W. Bullman of Roebuck was elected chairman of the Spartanburg Association April 1st at a meeting at Spartanburg. Other officers were S. F. Parrott, Spartanburg, vice-president; Ernest Carnes, secretary-treasurer. About 15 were present. E. S. Prevost discussed the care of bees at this season and answered questions in connection with the work.

L. D. Bray.

Canada Proposes Bounty on Certain Farm and Fishery Products

In connection with the annual budget proposals introduced into the Canadian Parliament by the Minister

of Finance on March 21, the Government of Canada proposes the establishment of an Agricultural Stabilization Fund, from which Canadian exporters of certain agricultural and fishery products to the British market are to be paid the difference between the price actually received and the price at a value for pound sterling of $4.60 Canadian currency, according to a telegram to the Commerce Department's division of Foreign Tariffs.

These payments are to apply to the following commodities: Animals, meats, (including bacon and hams), poultry, fresh and canned fish, tobacco, cheese, milk products, canned fruits and vegetables, maple products, eggs and honey.

Death of J. H. Reed

J. H. Reed of Moline, Kansas, died of pneumonia just before Christmas. He was the most prominent beekeeper in the Moline district, and had built one of the finest honey houses in the state. He managed between two and three hundred colonies of bees, packing his honey mostly in glass. Mr. Reed's honey is well known in southern Kansas for its fine quality.

For many years, Mr. Reed was either teacher or principal of some of the southern Kansas schools, but retired about fifteen years ago on account of his age. He had kept bees while teaching school as a hobby so it was easy for him to expand and make this his profession the last fifteen years of his life. He was seventy and leaves his wife, two daughters, and grandchildren.

Death of Mrs. F. F. Joubert

Beekeepers throughout the State of Washington will grieve to learn of the death on March 2 of Mrs. F. F. Joubert, mother of Julian P. Joubert, widely known beekeeper of Enumclaw, Washington.

Mother Joubert had been in failing health for many months so that her passing was not unexpected. Beside Julian, she leaves her husband, F. F. Joubert formerly Superintendent of the Enumclaw schools, and now proprietor of Jersey Acres; three sons, Lloyd, Stanley, and Maylon; and one daughter, Mrs. Hyles of Hilo, Hawaii.

Mrs. Joubert was well known to many Northwest beekeepers who were always made welcome at the Joubert fireside and table at Enumclaw. She was much interested in Julian's beekeeping endeavors, and made a point of serving honey at every meal. Washington and Oregon beekeepers particularly sympathize with Julian Joubert in his great loss.

N. N. Dodge.

During the honeyflow if an extracting super given in the morning is full of nectar in the afternoon, give the second super. The bees will need it. Geo. S. Demuth.

Honor Roll

List of American Honey Institute Subscribers from April 1, 1932 to March 31, 1933

Supporting Members

G. B. Lewis Co., Watertown, Wis.	$1000.00
Dadant & Sons, Hamilton, Ill.	500.00
A. I. Root Co., Medina, Ohio	500.00
Sioux Honey Assn., Sioux City, Iowa	500.00
Hazel Atlas Glass Co., Wheeling, West Virginia	150.00
August Lotz Co., Boyd, Wis.	125.00
D. D. Stover, Mayhew, Miss.	115.00
Fred W. Muth Co., Cincinnati, O.	100.00
Hart Glass Co., Dunkirk, Ind.	60.00
Continental Can Co., New York City	50.00
American Can Co., Chicago, Ill.	50.00
Standard Churn Co., Wapakoneta, O.	40.00
Leahy Mfg. Co., Higginsville, Mo.	25.00
A. I. Root Co. of Iowa, Council Bluffs, Iowa	25.00
A. I. Root Co. of Chicago, Chicago, Illinois	20.00
A. I. Root Co. of Syracuse, Syracuse, N. Y.	10.00
Colorado Honey Producers Assn., Denver, Colorado	5.00

Contributing Members

Alabama

W. D. Achord Apiaries, Fitzpatrick	$25.00
Hayneville Apiary Co., Hayneville	10.00
Jasper Knight, Hayneville	10.00
W. J. Forehand, Ft. Deposit	10.00
Bolling Bee Co., Bolling	10.00
N. B. Smith & Co., Calhoun	5.00
Citronelle Bee Co., Citronelle	10.00
David Running, Sumterville	10.00
J. M. Cutts & Sons, Montgomery	6.00
Crenshaw Apiaries, Rutledge	3.00
Alabama Apiaries, Mt. Pleasant	2.00

Arizona

Arizona State Beekeepers' Association, Mrs. May G. Loveitt, Secretary, 602 N. 9th Ave., Phoenix	$ 5.00

California

A. L. Mathews, Ceres	$ 5.00
John W. Vasey, Miramar	5.00
Wm. Clark, Modesto	3.00
T. L. Nicolaysen, Modesto	5.00
W. J. Oates, Lompoc	8.25
J. E. Eckert, Davis	1.00
E. F. Dickey, R. F. D. 1, Duarte	6.76
A. C. Mayer, R. F. D. 1, Box 570, Monrovia	8.45
M. P. Woodworth, 217 Leodora Ave., Glendora	7.47
R. E. Lusher, 612 Huntington Dr., Monrovia	7.61
Geo. Adamson, W. Ellwood St., Pomona	7.89
Jess Hepner, Arroyo Drive, Covina	7.89
Frank Kittinger, LaVerne	15.78
Peyton Bros., Fillmore	7.89
T. C. Burleson, Colusa	7.05
Jean P. Lamothe, Box 750, Coalinga	1.00
Harry Heath, 2425 Atlantic Ave., Long Beach	7.33
H. C. Crawford, 1082 Atlantic Ave., Long Beach	5.64
F. R. Buchanan, 242 N. Orange St., Glendale	7.89
Alameda County Bee Assn., Oakland	5.00
James McCrary, Oakland	1.00
Cary Hartman, Oakland	1.00
Wm. F. Exley, Newark	1.00
C. A. Muller, Oakland	.50
Charles Ferguson, Fresno	1.00
Bell Apiaries, Orange	10.00
E. J. Snider, Denair	15.00
H. L. Weems, Bakersfield	1.00
Mr. McQuilland, Orange	1.00
G. S. Davis, Anaheim	5.00
C. V. Backes, Orange	1.00
Melvin Witt, R. F. D. 2, Orange	.50
W. L. Osborn, R. F. D. 2, Box 508, Fresno	1.00
C. E. Lush, Orange	10.00
Fred Shugg, R. F. D. 2, Box 152, Kerman	1.00
R. K. Bishop, Orange	5.00
Alfred A. Turecek, Burrel	5.00
L. B. Crawford, 311 N. McClay St., Santa Ana	10.00
Herman Christensen, Norwalk	10.00
California Beekeeper (anonymous)	10.00
Dr. C. C. Bihler, Oakland	2.15
Robt. J. Splan, Van Nuys	1.00
H. M. Krebs, Sacramento	10.00
Geo. Adamson, Elwood No. 1, Pomona	5.00
E. C. Crawford, 417 E. Walnut St., Santa Ana	2.00
Gerald Twombly, Fullerton	5.00
Chas. A. Brown, R. F. D. 3, Box 86, Sangus	20.00
John A. Tillinghast, Anaheim	1.00
Roy K. Bishop, Santa Ana	5.00
C. F. Williams, Los Banos	5.00
Wm. Swegles, Modesto	.50
Albert Koehnen, Tracy	25.00

Canada

Mrs. F. E. Trousdale, Route 1, Puslinch, Ontario	$ 1.00

Colorado

Hans M. Mathison, Denver	$ 2.00
Fred Schappi, Box 62, Nucla	2.00
J. E. Wadleigh, R. F. D. 3, La Junta	10.00
J. W. Holzberlein, Jr., Grand Valley	6.75
Frank Hauch, Las Animas	1.00
Mary T. Comstock, Westcliffe	2.00
J. A. Green, Route 2, Grand Junction	5.00

Connecticut

Geo. A. Pyne, West Hartford	$ .50
Carolton W. Croteau, Mt. Carmel	1.00
Engelhardt & Miller, Wallingord Court Meriden	3.00

Florida

L. M. Lewis, Havanna	$ 9.40
Robert E. Foster, 1008 W. Michigan Ave., Gainesville	5.00
J. R. Kelley, 421 N. E. 70th St., Miami	1.00
Thos. E. Cato, P. O. Box 94, Pierce	1.00
Elwyn N. Moses, Route 1, Box 217, Fort Pierce	1.00

Idaho

W. N. Smart, 307 13th St., Lewiston	$ 1.00

Illinois

W. C. Moon, Henry	$ 5.22
McHenry Lake County Bee Association, O. P. Jankowski, Secy, Gurnee	10.00
S. Pitts, Stronghurst	4.87
W. J. Wallancha, Downers Grove	1.00
C. J. Anderson, Morris	8.00
Brother Frederick, St. Mary's Mission, Techny	5.00
C. Holm, Genoa	2.00
Geo. Sauer, Polo	1.50
E. A. Meineke, Arlington Heights	20.00
Harvey Foote, Green Valley	.60
Tri County Association, Maud S. Young, Secy., 704 Jefferson St., Oregon	2.00
Edgar Gnitzinger, Des Plaines	.50
C. G. Strieder, Brimfield	1.00
Phillip Krebs, R. F. D. 1, Marissa	1.00
C. F. Rife, Naperville	2.00
Morgan-Scott County Bee Association, Woodson	4.27
Ross R. Merrill, Batavia	2.70
L. A. Dean, Big Rock	2.70
Chas. M. Mackly, 1020 4th St., Peoria	.50
S. W. Gooch, 406 S. Adams St., Peoria	.50
Rue Seed Co., 418 S. Adams St., Peoria	.50
S. B. Moon, 505 Mackin Ave., Peoria	3.00
Peoria County Bee Association, Peoria	5.00
Edward Adam, Straun	5.00
Frank Haan, Des Plaines	6.00
H. G. Frymier, Carbon Cliff	1.00
Lawrence Rocke, Roanoke	1.00
V. G. Milum, Champaign	4.00
Macon County Bee Association, Decatur	5.00
Mrs. Eleanor Simmer, Chicago	1.00
Harry R. Warren, P. O. Box 1721, Chicago	5.00
M. Guthrie, Chicago	1.00
Gun Mozee, Chicago	1.00
E. J. McComick, Chicago	1.00
A. G. Gill, Chicago	1.00
Wm. Young, Chicago	1.00
Adam Bodenschatz, Lemont	1.00
C. L. Duax, Chicago	1.00

Indiana

Fred Sievert, Box 101, Porter	$ 1.00
E. S. Miller, Valparaiso	5.00
T. C. Johnson, La Porte	1.00
Elmer Deisch, R. F. D. 2, Elkhart	1.00
Wm. H. Busse, R. F. D. 10, Ft. Wayne	4.35
A. L. Scott, Williamsburg	1.00

Iowa

Carl Haag, Alton	$ 5.25
W. P. Mann, McPaul	9.95
L. Gartner, Rowan	6.98
Roy Littlefield, Exira	21.46
Newman Lyle, Sheldon	35.00
John C. Shattuck, Jr., Smithland	2.00
R. O. Shattuck, Smithland	2.00
Schedler's Apiaries, Sumner	1.00
Cherokee County Bee Association, Cherokee	5.00
J. W. Schlenker, R. F. D. 4, Des Moines	5.00
L. G. Garner, Rowan	2.79
John G. Jessup, 1421 McPherson St., Council Bluffs	10.00
R. E. Cook, Green Mountain	1.00
Jos. P. Bidne, R. F. D. 3, Decorah	.50
F. B. Paddock, Ames	5.00
F. W. Hall, Colo	3.00
A. O. Simmons, Onawa	4.64
C. M. Cale, (not given)	2.44

Kansas

A. V. Small, Augusta	$ 2.00
Irwin H. Klassen, Whitewater	1.00
Rev. Clement Nordhus, St. Benedict's Abbey, Atchison	2.00
O. A. Keene, Topeka	1.00
Jake Kuehni, Iola	2.00
Geo. Pratt, Topeka	1.00
Clover Hill Apiaries, Sabetha	10.00
Chas. Olson, Robinson	1.00

Kentucky

H. O. Kirby, 110 S. Fifth St., Louisville	$ 2.00

Louisiana

W. E. Anderson, P. O Box 757, Baton Rouge	$ 2.00
Garon Bee Company, Rosa	5.00
Geo. W. Bohne, Luling	5.50
L. V. Lee, Waterproof	.50
C. A. Lee, Waterproof	.50
H. Saxon, Waterproof	.50
Presley Saxon, Waterproof	3.50

Maryland

Julia G. Dev Andrews, 107 E. Lake Ave. Govans, Baltimore	$ 1.00

Massachusetts

Josephine Morse, Lancaster	$ 2.00
Richard Arms, Deerfield	2.00
Edw. A. Twing, Monterey	.50

Michigan

E. E. Eldred, Burlington	$ 7.20
M. H. Hunt & Son, Lansing	20.00
A. G. Woodman Co., Grand Rapids	35.74
Howard A. Potter, Jr., Ithaca	38.40
James E. Hilbert, Traverse City	20.00
C. J. Snover, Route 9, Kalamazoo	9.60
Leon A. Richter, 706 Fairview Ave., N. E., Grand Rapids	3.00
Floyd Markham, Route 3, Ypsilanti	18.00
David Running, Filion	50.00
M. N. Dillon, Fruit Ridge	20.00
James A. Dobson, Lock Box 44, Suttons Bay	1.00
Z. T. Hamilton, Almont	5.00
H. P. Christensen, Decatur	2.00
Archie Breakie, Grindstone	32.42
John Herbert, Kinde	5.32
Wilbur Walker, Port Austin	5.32
Frank Jeneschek, Middleville	4.50
F. B. Wilde, Wayland	3.00
Arthur Rattray, Almont	6.00
Elmer Rosman, Pontiac	1.00
Owen L. Clark, St. Clair	2.00
J. C. Laven & Son, Route 6, Grand Rapids	2.50
James Martin, Bellaire	25.44
Hessel Tacoma, Falmouth	2.50
C. E. Glover, Route 6, Kalamazoo	5.00
W. C. Greenleaf, Muir	2.00
Ernest Pettifor, Alba	1.00
Clarence C. Hibbon, Saginaw	1.00
A. C. Christ, Box 467, Dearborn	1.00
H. A. Abaugh, Gowen	5.00
Hiram Mackus, Jenison	1.00
C. F. Grauer & Son, Route 3, Saginaw	2.00
John D. McColl, Tecumseh	6.00
Norman Nellis, Mt. Morris	7.50
Wm. J. Martin, Crowell	8.18
E. C. Richardson, Adrian	.64
M. T. East, Traverse City	1.50
Fred W. Schroeder, 13572 Monica Ave., Detroit	1.00
F. E. Barger, Charlotte	.64
Maynard Beck, St. Johns	3.75
John Kaufman, St. Johns	1.25

A second page in June will be needed to complete this list. See June page for balance.

Crop and Market Report

Compiled by M. G. Dadant

For our May crop and market page, we asked reporters to answer the following questions:

1. How are bees coming out of winter?
2. Honey plant conditions.
3. Is honey cleaning up?

Bees

In the New England States, it is a little early to estimate the condition of bees as most of them are in winter quarters, particularly in Maine. However, reports come from Connecticut that bees are coming through in excellent shape. New York reports the bees 100 per cent and in the Atlantic seaboard states, bees are in excellent condition, particularly in Maryland and Virginia where they are above normal whereas in North Carolina and Georgia, they are perhaps a little below normal. In Florida, conditions are about normal.

In the balance of the southeast, east of the Mississippi River, the weather has been cool and backward and bees have been slow in building up but they are reaching a swarming condition now or as one package shipper expressed it a "shaking" condition.

In Kentucky, Tennessee and Alabama, the bees are perhaps 90 per cent of normal whereas in Mississippi, Louisiana and in Texas, normal conditions prevail although the recent cold snap has retarded them somewhat because it has withdrawn nectar for a short time at least.

In Pennsylvania and Ohio, bee conditions are about normal and we find the same conditions applying to Indiana and Illinois, Iowa and Missouri.

The states of Michigan, Wisconsin and Minnesota complain that bees are running short of stores and that they look for considerable loss, particularly in the unprotected bees.

The plains states throughout are reporting bees perhaps 80 per cent of normal largely because of a lack of stores and this condition extends clear down into Arizona and New Mexico.

In Colorado, the losses have been heavy; some beekeepers estimating an average of about 30 per cent loss. Utah also reports considerable losses and bees at 80 per cent normal. In fact this same condition apparently applies also in Idaho, Wyoming and Nevada with Nevada perhaps being the worst off. Montana is the only one of the Montana states which reports something like a normal condition and this, of course, extends down into northern Wyoming.

In Washington and Oregon also conditions are backward and losses have been fairly heavy. In California, the weather has been backward and the bees are only about 90 per cent of their usual condition.

Honey Plants

Again it is a little early to anticipate conditions of honey plants in the New England States although there have been good snows and apparently the honey plants should come out about normal. In New York and Pennsylvania, the weather was dry early so that there is a question as to just how much of the clover has been carried through the winter. Late rains and snows, however, should have helped considerably and perhaps conditions may reach something like normal. In the entire Atlantic seaboard and southeast, the honey plant conditions are very favorable, indeed. Perhaps 20 per cent above normal except, of course, in Georgia where the heavy fires occurred last year, the honey plants although numerous are small on account of all being new growth. Florida is reporting an extremely heavy flow from oranges this year with some beekeepers reporting as much as 100 pounds already harvested at the time the report was received here with the flow not yet over.

In the southern states, honey plant conditions are approximately normal or perhaps a little below. Texas which earlier had excellent conditions has been struck by a hard freeze which has hurt the early producing plants but perhaps will have no effect on the later producers which are apparently normal.

The state of Ohio seems to be suffering somewhat the same as Pennsylvania and New York from early drought and a question as to just how many of the clover plants will survive. Much better conditions, however, are reported through Indiana, Illinois and Iowa together with Missouri which seem to be in a position to go back to one of the old white clover years if climatic conditions are right during the honeyflow.

Wisconsin, Michigan and Minnesota are not up to normal with Wisconsin being the worse off, some reports being as low as 50 per cent owing to no carryover of white clover plants because of drought last summer and fall. Rains in many instances have helped considerable and there may be yet a small stand at least. Western Minnesota, of course, is reporting desirable conditions from sweet clover.

In the plains states, the clover does not seem to be as plentiful as a year ago although late moisture has put it in excellent shape. Still we do not look for conditions to be normal for the year.

The dry condition prevails throughout northern New Mexico, Arizona, Colorado, Nevada and some sections of Utah. Many of our reporters are stating that the snow is scarce in the mountains, the last season was dry and anticipate that the drought is going to hold over long enough to badly hurt the crop for the 1933 season. As a result, we see reports of honey plant conditions ranging from 60 to 80 per cent throughout the intermountain territory except in northern Wyoming and in Montana. Some parts of Utah, also, have had excellent snows and anticipate something like a normal condition.

The same apparent conditions extend from Idaho into Washington and Oregon where only about 80 per cent of normal conditions are apparent at the time.

California which earlier reported excellent conditions and good moisture, has been struck by more drought. Outside the irrigated region, the conditions are toward extreme drought. Orange bloom is two weeks late but, of course, the anticipation is for a normal flow from that although the later flows look very dubious.

In the Canadian provinces, conditions are about normal as to bees in the eastern provinces, normal for honey plants with perhaps slightly under normal as we get into the prairie provinces owing to the early drought and the question as to whether sufficient rains will come to carry the sweet clover through.

Honey on Hand

In practically all instances, honey is cleaning up very nicely. Some of the states reporting a carryover yet are Florida, Illinois, Iowa, Michigan, Idaho, Colorado.

By this we do not mean that every other section has no carryover of honey. As a matter of fact, there are many individual beekeepers in almost all states who have considerable honey left on hand. In many instances, this was caused by either of two causes. Either the beekeeper has been slow in making an effort to sell his honey or else he has not been satisfied with the price and preferred to hold his honey over, anticipating better prices later on.

Summary

All in all, it looks like the bees would come out of winter quarters in about normal condition although in many places they are going to need feed earlier than usual, partly due to early warm weather starting breeding, partly to the fact that the colonies were not sufficiently filled with stores last fall.

Honey plants do not look in normal conditions except perhaps in the southeast and some sections of the south in the United States and in the middle of the belt of the white clover, especially in the states of Indiana, Illinois, Iowa and Missouri.

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

ITALIAN bees and queens, two- and three-pound packages with young laying queens for early spring delivery. Write your needs. Service, satisfaction. Honey Bee Apiaries, Sandwich, Ill.

GOLDEN Italian Queens and Bees for 1933, ones that are guaranteed to please you. One two-pound package with queen, $2.00. Ten or more, $1.75. Each queen, 60c each. $7.00 per dozen. Safe arrival. Health certificate with each package. E. F. Day, Honoraville, Alabama.

CARNIOLAN and golden queens, tested, 75c and untested 50c each. 3 pounds of bees and queen, $2.00. 2 pounds of bees and queen, $1.50. Write for price of nuclei.
C. B. Bankston, Buffalo, Texas.

CALIFORNIA PACKAGE BEES & QUEENS —Young three-banded bees shipped in new non-returnable packages, our YOUNG ITALIAN QUEENS are HOME GROWN, and the best that money can buy. Write today for new low prices. Thos. C. Burleson, Colusa, California.

LIMITED number of package bees with young Italian or Caucasian queens at astoundingly low prices. To buy before you get our quotations would be a mistake. Prompt shipment and satisfaction guaranteed. H. G. Graham, Lane City, Texas.

FOR SALE—Pure Italian Queens, Bees, the red clover kind. Queens, 40c each. Per doz., $4.50. One pound of bees with young queen, $1.50. 2-lbs. bees with young queen, $2.00. All charges paid to your post office in U. S. A. Graydon Bros., Route No. 2, Greenville, Alabama.

WESTERN headquarters for package bees and Italian queens. One hundred two-pound packages with select, young, laying queens, $1.20 each, three-pounds, $1.60 each. Most northern breeder in the West. Less express charges. Free circular.
J. E. Wing, Cottonwood, Calif.

PACKAGE Bees and Queens—Three banded Italians. Lower prices for 1933. Two-pound package with queen, 5 to 100, $1.25 each. Two-pound package without queen, 5 to 100, $1.00 each. Three-pound package with queen, 5 to 100. $1.75 each. All shipments are made by express. Safe arrival guaranteed. Health certificate with every shipment. Little River Apiaries, Box 83, Gause, Texas.

BEST package bees and queens at low prices. Write for prices.
N. B. Smith & Co., Calhoun, Ala.

50 CENTS each for Italian queens that produce the true 3-band leather colored bees. Inspected and guaranteed. Queens shipped in my own, popular introducing cage. Write for prices on quantities.
J. F. Diemer, Liberty, Mo.

CAUCASIAN QUEENS from northern stock where winters are long and hard are better adapted to gather a crop. Select untested, 60c each. 25 up, 50c. June delivery.
Bird's Apiaries, Odebolt, Iowa.

THREE banded Italian queens, select untested, 50c each.
Alamance Bee Co., Graham, N. C.

ITALIAN QUEENS, 50c. Bees, 2-lb., $1.90. 3-lb., $2.40. Orchard package 3 frames, $3.50, equal 6 lbs. Will trade for honey. Reduced price May 20. Homer W. Richard, 1411 Champnolle, El Dorado, Ark.

GOLDEN Italian queens that produce good workers and gentle to handle. Satisfaction guaranteed. Select tested, $1.50. Tested, $1.00. Untested well worth 75c, now for 50c.
D. T. Gaster, R. No. 2, Randleman, N. C.

BASSETT'S "Italian Queens and Package Bees." Queens 50c each. Fifty or more at 45c each. Leather colored, bright Italians and Caucasians. Package bees, Two-lb. package with young queen, $1.65 each. Fifty or more, $1.25 each. Three-lb. package with young queen, $2.00 each. Fifty or more, $1.50 each. After June 1st, Queens, 35c each; three for $1.00; $30.00 per hundred. We guarantee everything. Health certificate with shipment.
C. Bassett, Prop., IXL Apiaries, Ripon, Calif.

HONEY FOR SALE

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins. Dadant & Sons, Hamilton, Ill.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

NEW crop honey. Choice sweet clover extracted. Thomas Atkinson, R. 5, Omaha, Neb.

TUPELO honey; will not granulate. Shipped in any quantity. Anthony Bros.' Honey Co., Apalachicola, Fla.

HONEY—We sell the best. Comb in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Illinois.

EXTRA WHITE extracted, not mixed with capping melted. Geo. Seastream, Moorhead, Minnesota.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

WHITE clover honey in new 60-lb. cans. Write for prices. Reinhold Bee Farms, Flat Rock, Michigan.

WHITE clover comb, 12 to 14 oz. net $2.25 per case. C. Holm, Genoa, Ill.

HOWDY'S HONEY—Want to contract to produce comb and cut comb honey this year. Howard Potter, Ithaca, Michigan.

FOR SALE—Well ripened, extracted honey gathered from clover, carlot or otherwise. Will be pleased to submit sample on request. Also section or shallow frame comb honey in local shipment. Colorado Honey Producers' Association, Denver, Colo.

HONEY AND BEESWAX WANTED

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cents a pound for wax rendering. Fred W. Muth Co., 204 Walnut St., Cincinnati, Ohio.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Hamilton, Wallace & Bryant, Los Angeles.

WILL PAY CASH for honey. Send samples. Sherman Whitney, Puyallup, Washington.

FOR SALE

340 ten-frame shallow supers with frames, at a bargain.
Chas. S. Engle, Fargo, North Dakota.

FULL COLONES FOR SALE—All or any part of 100 full colonies; or will sell 50 acre farm and queen and package business in ideal location. Part terms.
Haileys Apiaries, Hughes Springs, Texas.

FOR SALE—High grade bees in hives. If interested, write George Schilling, State Center, Iowa.

FOR SALE—Medium brood foundation, 100 lbs., $30.00 Fifty lbs., $15.50. Ten lbs., $3.35. Fred Peterson, Alden, Iowa.

FOR SALE—Used once sixty pound tins and cases. Schultz Honey Company, Ripon, Wisconsin.

FOR SALE—New Root Simplicity 45-frame extractor, discount.
Joseph Burk, Norwalk, Iowa.

PORTABLE extracting house, 8x20. Heavy, solid, rubber tires.
Brookside Apiaries, Ruthton, Minn.

FOR SALE—150 new and used supers with frames, standard ten-frame, in southwestern Wisconsin. Priced for quick sale. Inspection certificate furnished.
G. J. Lengst, Birch Run, Mich.

SUPPLIES

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

FOR SALE—Comb foundation. Note these new low prices on 100-lb. lots: Medium Brood, 35c; Thin Section, 43c. Also wired foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

BARGAIN LIST—Every item in good, usable condition. Priced to sell quickly. Reason for selling, no longer listed in our catalog. Brushes, cartons, glass jars, smokers, veils, box seats, feeders, section presses, shipping cases, foundation, queen cages, etc. Write for free list.
G. B. Lewis Company, Watertown, Wis.

SAVE queens. Safin cages now 15c. Ten for $1.00. Allen Latham, Norwichtown, Connecticut.

FOR SALE—Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices. Hamilton Bee Supply Co., Almont, Mich.

THE PINARD NAILLESS queen shipping cage. 810 Auzerias Ave., San Jose, Calif.

SPECIAL inducement to try out our hives and foundation. If you don't think they are worth the money paid, return them and all money paid will be refunded. 5 10-frame hives with reversible or regular wood covers, $7.75. 5-lb. wired brood foundation, $2.00. 5 lbs. thin super foundation, $2.15. 5-lbs. medium brood foundation plain, $1.85. Root's foundation mill, $15.00.
Rettig Supply Co., Wabash, Ind.

The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

April 6 was the 82nd birthday of C. P. Dadant. It seems but yesterday that the beekeepers sent him a shower of letters on his 73rd anniversary. The years pass quickly and it hardly seems possible that nine have gone by since that happy occasion.

April 8 brought my own 31st wedding anniversary. In the years since 1902, four children have come to us, have grown up, gone away to school and are now settled with their own affairs. With the coming of the grand babies we realize that we are getting on and must think of speeding up a bit if we are to accomplish all the things we had set out to do.

— : —

By the time this is in print I hope to be back at the Iowa farm busy with the bees and the garden. What a relief it is to get into the sunshine after the long winter. Congress may pass the proposed law to limit industry to six hours a day for five days a week but the farmer will go on working from early to late. He may never get union wages for his work but he has the best of the man who is cooped up inside all his life.

— : —

In the April Indiana Beekeepers' Bulletin is a letter from E. S. Miller who contends that it is impossible to produce honey at a profit at 4½ cents per pound with a sixty pound per colony average. While what Miller says is true, we must remember that present conditions are abnormal. Neither is it possible to make a profit in raising corn, or cotton or hogs at present prices. In comparison to other farm products honey makes a good showing. Miller's figures show a slight loss for the sixty pound average but the man who can get one hundred pounds or more can still make money at present low prices.

— : —

And now we read that anemia is treated by introducing traces of organic copper compounds in the food. Since it has recently been reported that scientists have found traces of copper in the dark grades of honey we cannot but wonder whether this dark honey might serve to prevent anemia. Another problem for the research laboratory.

— : —

Beekeepers who have difficulty in selling their honey for cash report that it is no trouble at all to exchange it for many of the things which they need. Often they can dispose of it on an exchange basis at a far better price than it would bring in cash. After all, why worry about the cash as long as one can get the things for which one would spend the money.

— : —

With reference to the temper of Caucasians I have run across a comment by Doctor Miller written many years ago in which he said that while they were supposed to be the gentlest race of bees, in fact many of them failed to live up to their reputation. Apparently the good Doctor had some such experience as Carr reported.

— : —

In the discussion of hives everybody seems to have lost sight of Allen Latham's let-alone hive which attracted much attention some years ago. That was the one really big hive. Say Allen why not tell us whether you still find that hive useful and whether it has stood the test of long use.

— : —

Just when our bees are getting started with spring activity Alfred H. Pering writes from Florida to say that his bees have about three Dadant supers of orange honey per colony already on the hives. That is a good start for one season. If one or two more good flows happen along during the year, Florida beemen ought to get through the winter. Another case of success with the big hive in the south.

There is an interesting suggestion in Eldred's article on page 177. The fact that so many passing by, stopped to buy honey when they saw the hives, should encourage beekeepers to do more to call their product to public attention. Those situated on important highways have a special opportunity to dispose of their crop at retail.

— : —

It is hard to hold the staff to the desks since the spring days came. L. C. gets out to his farm to plant apple trees, M. G. has started a berry patch and Glory (Cale) sneaks off to size up the best bee locations in three hundred miles. I am the only fortunate one with no office duties that must hold me down.

— : —

Prof. Garth Johnson of the Keokuk high school uses an observation hive and has a series of lessons on the honeybee for his biology classes each spring. As a result the students leave the school with a clear understanding of the bee and its place in nature. More encouragement should be given such work.

— : —

A large baking company recently bought a car of honey from a beekeeper whose name was secured from a list of supporters of the American Honey Institute. That fellow sure had reason to realize that the Institute is getting results.

— : —

That article on moving bees on page 171 brings to mind some personal experience. Of particular interest is the necessity of fastening the combs so that they will not swing back and forth or move about within the hive. My method has been to crush pieces of newspaper and crowd between the combs. This is easily and quickly done and holds the frames quite rigid.

Moving bees is now so common among commercial beemen that moving screens are a part of regular equipment in large outfits.

— : —

Portable extracting houses similar to that pictured on page 172 are in very common use among the big beekeepers of the west. With several apiaries it is easy to use the same outfit at each yard. Always ready for operation it requires a minimum of trouble or expense.

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The first time I visited Manitoba, beekeeping was a novelty. My friend Floyd had but recently assumed his duties as extension apiarist and he was doing his best to convince a skeptical public that beekeeping was a practical business for the western prairies. Most of the honey came from Ontario and sold at fancy prices. Now we find Manitoba to be one of the centers of largest production. Mitchener's article on page 174 gives some interesting suggestions. One cannot but wonder how far north the beekeeping region will eventually be pushed.

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Those Nebraska folks are telling the public about honey. Recently Don B. Whelan gave a radio address from Lincoln in which he quoted numerous physicians as to the health value of the product. If that kind of thing keeps up it won't be long until the buyer will be seeking the beekeeper instead of the beekeeper hunting the buyer.

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A real honey prospect in the Middle West. E. M. Cole of Audubon, Iowa writes that the white clover prospect is the best that he can recall in forty years. About once in ten years the white Dutch clover turns out a crop to make any beeman smile. It was in such a year that Doctor Miller harvested his famous crop of comb honey which was the talk of the industry for several years. Since sweet clover has become common such yields are no longer a novelty.

FRANK C. PELLETT.

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